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Schools of Knoxville and Knox County

ENROLLMENT
PROGRAM
FINANCING
ADMINISTRATION

METROPOLITAN PLANNING COMMISSION
KNOXVILLE KNOX COUNTY

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of
Knoxville-Knox County

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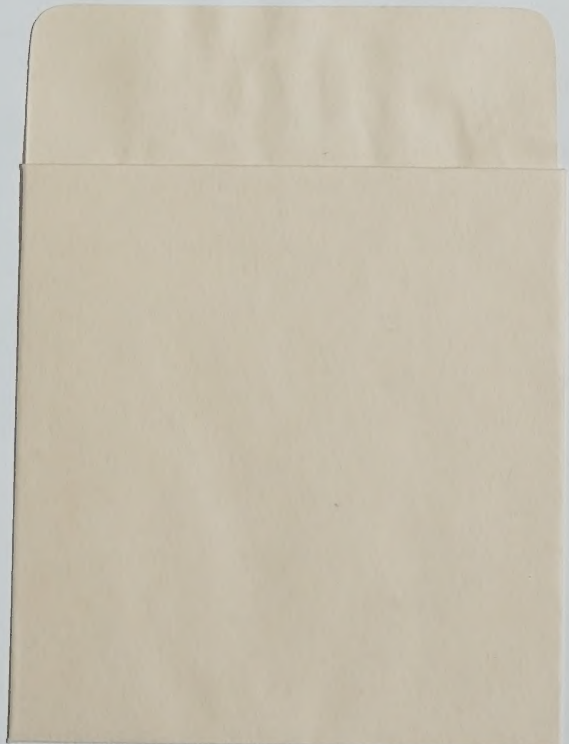

mpc Knoxville Knox County

METROPOLITAN PLANNING COMMISSION

CITY HALL PARK • P.O. BOX 1646 • KNOXVILLE, TENNESSEE

May 14, 1962

The School Boards of Knoxville and Knox County, The Knoxville City Council, The Quarterly County Court of Knox County and the Board of County Commissioners, the School Study Advisory Committee, and all other Public Officials and Citizens of Knoxville and Knox County.

Gentlemen:

Herewith transmitted is a copy of the school study of Knoxville and Knox County. This study is the result of the combined efforts of the consulting team of Doctors A. D. Albright, R. N. Finchum, R. L. Johns, John Martin, Truman Pierce, and W. Paul Street, the Knoxville and Knox County School Boards, the School Study Advisory Committee, and the Metropolitan Planning Commission.

The provision of adequate education is one of the most important issues facing our community today. In the instance of both the City and the County, it is the largest single budget item of all services provided. Problems of providing adequate education have been confronting our community for many years. Annexation has lent urgency to their immediate solution. Problems facing education at the local level are complex and deep-seated. Unless these are faced realistically they will only increase in scope and complexity.

This study deals with the basic problems confronting local education and recommendations are made for dealing with them. It proposes a structure for this area through which education can be offered more intelligently and economically in the future than has been possible in the past.

Sincerely,

William E. Cole

William E. Cole, Chairman

WEC:h

A. D. Albright and Associates
Lexington, Kentucky

May 14, 1962

The Metropolitan Planning Commission
of Knoxville-Knox County, Tennessee

Gentlemen:

With this letter we submit to you a report of the school study authorized by you and in accordance with an approved plan and agreements.

We appreciate the pleasant and challenging opportunity the study has afforded us to become somewhat intimately acquainted with education in the metropolitan area and with you and many other interested and helpful individuals. We want to express especially our gratefulness to Mr. Joe B. Whitlow, Mr. D. David Brandon, Mr. David C. Slater and others of your Commission staff. Their cooperation and work were exceptional, as was the assistance of Dr. William E. Cole, Chairman of the Commission.

We earnestly hope this report will be greatly useful in achieving the objectives of the Commission, in furthering the civic interests of County and City governments, and in advancing the cause of education toward a better metropolitan future.

Respectfully submitted,

The Study Team

A. D. Albright
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R. L. Johns
John S. Martin
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W. Paul Street

Schools of Knoxville and Knox County

Enrollment
Program
Financing
Administration

Metropolitan Planning Commission
Knoxville and Knox County, Tennessee

May 1962

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Forward

Effective Planning for any public service depends upon the knowledge that responsible agencies and individuals have of current conditions and the most likely problems to be confronted in the future. Educational planning is no less dependent upon reliable data and information. The study to be reported in the following parts of this document attests to the recognition of that necessity of planning for education in metropolitan Knoxville and Knox County.

A particular imminent change in 1961 seemed to initiate and spark the study. It was annexation. Governmental and civic leaders, businessmen, the local boards of education and educational leaders, the Metropolitan Planning Commission and other agencies, and many individuals recognized that this change would impose accompanying problems upon County and City governments and upon the two school systems. Just what these problems would be specifically and how they might be met judiciously were not immediately apparent. Thus, a study was proposed. And the responsibility for the study was subsequently lodged with the Metropolitan Planning Commission.

As a first step in the discharge of its responsibility and with concurrence of the local boards of education and their executive officers, the services of a consulting team were procured by the Commission for the conduct of the study. This consulting team prepared a tentative design for the study which was reviewed by the Commission, members of the local school boards, the superintendents of education, a general advisory committee of government, business, civic and educational representatives, and by other informed individuals. Revisions of the design followed the reviews to embrace pertinent suggestions.

The design, as developed for guidance of the study, consisted of five major parts, each of which temporally covered past and current trends and conditions and the prospects to 1975.

The first part focused upon population, economic and social characteristics important to school planning. Included were such factors as numbers to be educated and where they will be, educational levels, changes in employment and income, and cultural transitions, all of which have meanings for education.

Secondly, any sound planning must be concerned with the kinds of school programs to be provided. The most effective designing and utilization of physical facilities, for example, is realized when there is clarity in what program a school building is supposed to house. Accordingly, the second major part of the design called for analysis of present educational programs and the desirable characteristics of programs for the years ahead.

Following that pattern of reasoning, assessments of existing physical facilities and those needed for the future constituted the third major part of the study design. Where present buildings are located and used in relation to people to be educated, where new facilities or improvements in the old are needed, the utilization of buildings, and the transportation of those attnding school are significant matters for examiniation and study in any governmental unit.

Of course, financing education is always an important consideration. Its relationships to other governmental expenditures, general ability to support education and other public services, the desired school programs and numbers to be educated, and essential physical facilities and services are major factors in planning. Part four of the design outlined this basic aspect.

Finally, having considered the numbers to be educated and some of their economic and social needs, the kinds of school programs existing and desired, the necessary physical facilities, and the financing of education, a question logically arises about what is the most plausible structure, organization and administration for the schools, based on the other four parts, to realize the best possible education in the most efficient and economical ways. Thus, the final major part of the study design centered upon this question.

Annexation, and its accompanying problems for the present and future which initially triggered the study, was identifiably infused in all parts. Realistically, it could not have been otherwise treated in isolation with any expectation that more than immediate, temporary or makeshift solutions could be proposed for planning.

Adopting this five-part design, the ensuing report of the study follows the same pattern in presenting the findings, conclusions and recommendations of the consulting team to the Metropolitan Planning Commission.

For the more impetuous, time-drained readers a brief resume precedes the full text. The person, however, who seeks greater understandings and deeper insights for the wisest decisions on the metropolitan area's educational future is encouraged to read the entire manuscript, whether he subsequently agrees or not with what is presented.

THE STUDY IN BRIEF

PART I. POPULATION, ECONOMIC AND SOCIAL CHARACTERISTICS

1. The population of Knox County can be expected to reach 307,000 by 1975 and the school-age numbers to increase about 14,000 (25.4 per cent) from 55,000 in 1960 to 69,000 in 1975.

2. A steady out-migration, mainly in the 20-34 age group seeking better opportunities elsewhere in the 1950-60 decade will not abate greatly unless steps are taken to improve economic opportunities in the metropolitan area.

3. Before annexation, the County school system could expect an increase in school-age population of 16,000 by 1975 and the City a decrease of over 2,000.

4. Under annexation the "new" City will have a school-age population of approximately 44,000 by 1975 and the County will have approximately 25,000 with increases continuing to occur in every sector of the remaining "new" County system.

5. Both the County and City have done especially well in the high percentages of school-age children who are enrolled in school and who are in average daily attendance. School enrollments are expected to reach 67,000 by 1975 and average daily attendance to be 60,500.

6. A problem that should be of great concern is the number of functionally illiterate persons in the population: 15,720 people 25 years of age or over in 1960 had no more than the fourth grade education and 30,000, roughly 20 percent of the population 25 years old or over, had a sixth grade education or less.

7. Considerable change in the economy of the metropolitan area has occurred in the last ten to twelve years. Manufacturing, mining and the "producing services" of transportation, communications and utilities had employment declines.

The increases occurred in the "producing services" of finance, insurance, real estate, wholesale and retail trade, and government, the last having the largest growth.

8. Knox County has made no gain on the national average of per capita disposal income and the percentage increase for the County is likely to decrease by 1975.

9. New and better employment opportunities, involving more highly trained manpower, will be necessary. This has meaning for public education.

10. Changes in the social and living conditions can be expected. Suburbanization will continue. Greater diversity between neighborhoods is probable while individual neighborhoods will develop greater likenesses within themselves. Home and family patterns will continue to change. Certain classifications of delinquency and crime can be expected to mount in the number of cases. Mental illness will increase, and greater numbers of school-age children will require help.

11. Transitions already occurring in other aspects of living will affect the schools. Knowledge will continue to expand rapidly. Closer contacts with other people in the world is already national policy. The gorwth of technology cannot be reversed. The population will become ever more mobile, within the County, into the County, and out of the County. The "thinking" community will continue the quest for better education.

12. The interdependence and the problems of economic, social and governmental affairs of the metropolitan area will plead for some kind of unified planning and leadership for the schools.

PART II. DESIRED AND CURRENT EDUCATIONAL PROGRAMS

1. The school programs in Knox County and the City of Knoxville are being influenced by national

trends, and though they have not changed rapidly, progress has been made. The primary barrier to advancement has been a lack of community understanding of what the schools are attempting to accomplish and of their relationship to the development of the total metropolitan area.

2. The curriculums are organized much as they were many years ago. Most of the changes in content have been in the form of added courses and traditions have retained some subjects whose value is questionable in the light of changing educational objectives. Students still attempt to learn subjects in uniform blocks of time and teaching structures have not been generally reorganized to make the most effective use of the many professional competencies teachers possess.

3. The County has a disproportionate number of teachers who have not completed a desirable minimum of college preparation. Salaries in both school systems are not sufficient to attract and hold new and better qualified members of the profession. The salaries give small incentive for professional personnel to continue vigorously more advanced preparation and to improve their professional skills.

4. Teaching technology has entered some classrooms in the form of television and other audio-visual aids. Programmed learning has recently joined these devices though effective use is still limited.

5. Vocational education and courses for adults, offered largely by the City, have provided opportunities for out-of-school youth and adults. Some summer programs have expanded the school year for some people and an awareness of the need for continuing education is apparent. Expanding these services can provide for some of the growing needs of the community.

6. Increasing the quality of school programs need not take an exhorbitant amount of funds and steps can be initiated now that would have promise for the advancement of the school programs:

   a. Develop a clearer community understanding of the objectives of education.

   b. Re-examine the curricular content of the educational programs in light of established objectives and make deletions, additions, and other changes in terms of a total twelve-year program.

   c. Reorganize instruction through planned stages to make more effective use of the special competencies of teachers.

   d. Evaluate the present guidance and testing programs in the schools in terms of adequate utilization of these services by classroom teachers.

   e. Develop and effectively utilize the professional skills of all professional personnel.

   f. Expand the use of school facilities for adult and vocational education in the evening and afternoon.

   g. Institute afternoon and evening programs for in-school youth in depressed neighborhoods.

   h. Expand the summer programs and carefully examine the need for kindergarten as a part of the total school program.

   i. Budget a percentage of available funds for educational research and experimentation.

   j. Expand the use of technological aids in the schools to improve the quality of instruction and better utilize the competencies of teachers.

7. To provide equal educational opportunities for all children in Knox County and to advance the quality of school programs, more cooperation or unified action will be required between the two school systems in the future. This can be effected in developmental stages and may efforts can be initiated now.

PART III SCHOOL PLANTS AND TRANSPORTATION

1. School Plants exist for the purpose of making teaching and learning more effective. The degree to which they contribute to the education of students is an important factor in the equality of educational opportunity when examining two or more school systems.

2. Extensive building programs since World War II by both Knoxville and Knox County have been necessitated by growth and shifts of population. During the past decade alone, the County has constructed 14 of its 78 buildings and has made 87 of 145 additions to existing buildings. The City of Knoxville has constructed 5 of its 39 buildings and has added 32 of 54 additions to existing buildings.

3. Variations in the kind and quality of buildings within and between the two school districts are extensive and exert a strong influence on differences in educational quality available to students. The median age of original school buildings now in use in the City is 34 years, in the County 26 years. A total of 17 buildings in the metropolitan area should be abandoned now or in the very near future. By 1975 from one-fourth to one-third more of these buildings should be replaced.

4. Modernization of buildings has been undertaken in both districts with some success. There are, however, extensive differences in the availability and adequacy of accessory spaces, such as libraries, auditoriums, lunch rooms, gymnasiums and other important parts of a complete school plant, between and within the districts.

5. An expenditure of $9,840,000 is needed in both districts to bring present plants (including replacements) up to reasonable standards. Site expansions totaling about 93 acres at an estimated cost of $1,451,445 are needed to achieve or at least approach minimum standards. By 1975 an expenditure of $20,000,000 will be needed to provide adequate plants for what is now the Knox County school district. Replacement costs will amount to approximately $3,500,000. Expansion to meet increasing enrollments will require $16,500,000. Expenditures needed for new construction in the "old" Knoxville district by 1975 amounts to only $2,000,000.

6. Annexation drastically shifts the balance of responsibility for buildings between the two districts. The "new" Knoxville inherits needs in buildings and sites totaling $5,157,395, the County being relieved of that amount. This reduces the need in the "new" County district to $4,626,510 and raises the City's to $7,113,435. Each district will need expenditures of $10,750,000 in plant replacements and expansions by 1975, not including site expansions.

7. School plant planning in the two school districts has been and continues to be done largely on the basis of immediate pressures and demands felt by the separate systems as they function in relative independence of each other. Shortage of personnel has seriously limited planning by the districts. No machinery exists for coordinated planning on the level of metropolitan problems and needs. One result has been overcrowded schools in some locations while empty classrooms existed just across district lines.

8. A central metropolitan agency charged with projecting school plant needs and with planning to meet those needs is essential. Unification of the two present districts appears to provide the most feasible means of fixing this responsibility.

9. An efficient pupil transportation system helps make possible the maximum use of plant facilities, providing a means to transfer students from overcrowded areas to those where there is space and providing needed flexibility for a school district in which population is shifting.

10. The City of Knoxville does not provide pupil transportation; the County does, by a privately owned system. With annexation of part of the County district the City will be faced with the problem of either withdrawing or providing transportation service.

11. A centrally organized system of pupil transportation should be established to serve the schools of Knoxville and Knox County. Unification of the two present districts would automatically provide the structure.

12. If the two districts do not merge, the City should contract with the County to provide the service needed. The City is not eligible to receive state funds to aid in the operation and consequently would find an advantage in some contractual arrangement.

13. The relative merits of a privately owned and a publicly owned transportation system should be carefully weighed in terms of service desired. If the decision is made to enter into a public ownership plan, such a transition might be made by a schedule to operate over a period of at least five years in order that private carriers now operating may have a fair opportunity to retire their investments. Otherwise, outright purchase of their equipment would be necessary.

PART IV. FINANCING THE PUBLIC SCHOOLS

1. Approximately 73 per cent of the 1961-62 total budget of the Knox County Quarterly Court was allocated for the public schools of the County

and City of Knoxville. About 47 per cent of the City's total budget was allocated for education that year.

2. The County had bonds and notes outstanding in the amount of $15,860,000 of which $6,140,000 was in County-wide school bonds and $8,294,000 in rural school bonds. The total indebtedness of the City amounted to $33,105,000 of which a little over one-third was for schools.

3. The proceeds of County-wide bond issues, the debt service on which is paid by property taxes, are allocated between the two districts on the basis of the average daily attendance of pupils. This method of allocation bears little relationship to capital outlay need because it assumes the same rate of growth in attendance in the two systems.

4. Using either of two assessment estimates (.89 of one per cent or 1.18 per cent of market value), the County property tax rate in 1961 was relatively low as compared with many sections of the United States. The total City tax rate, which includes the County tax, ranged from $2.29 to $2.59 per $100 of market value of property. This is not an excessive rate but neither is it low.

5. Revenue receipts per pupil in average daily attendance for the Knox County schools increased 56.4 per cent in adjusted dollars from 1950-51 to 1961-62. For the City the increase was 33.6 percent.

6. Revenue receipts per pupil of Knox County and the City of Knoxville combined were equivalent to 61.4 per cent of the national average in 1961-62 whereas the per capita disposal income of the entire County was equal to 81 per cent of the national average for 1960. Thus, the people of Knox County were making considerably less effort to support the public schools in proportion to ability than the average for the nation.

7. Current expenditures per pupil in average daily attendance in the Knox County schools equaled 55 per cent of the national average in 1950-51 and 60 per cent in 1961-62, a slight relative gain. For the City the per cent declined from 88.7 in 1950-51 to 79.7 in 1961-62, but it remained substantially above the County in relation to the national average.

8. Current expenditures per pupil in Knox County equaled about 62 per cent of the expenditure per pupil in the City of Knoxville in 1950-51 and 75.3 per cent in 1961-62, a marked trend toward equalization between the two systems though a considerable gap remained.

9. The teachers' average salary in Knox County was 82.5 per cent of the national average in 1950-51 and 76.5 per cent in 1961-62. In the City the per cent was 122.4 in 1950-51 but it dropped to about 94 per cent in 1961-62. Thus, both systems declined in teachers' average salary during the 11-year period in relation to the national average, despite the fact that Knox County increased teachers salaries by 69.7 per cent and Knoxville increased them by 40.5 per cent.

10. In adjusted dollars, the salaries of Knox County teachers increased about 42 per cent between 1950-51 and 1961-62 and Knoxville teachers increased 17.5 per cent.

11. The disposal income for Knox County is estimated to increase from $403,877,000 in 1960 to $729,825,000 in 1975. The percentage of total state and local taxes for school support is estimated to increase from about 3.7 of disposable income in 1960-61 to a point between 3.7 and 4.9 in 1975-76. Accordingly, revenue receipts for the public schools of Knox County and Knoxville are estimated to range between approximately $28,000,000 and $37,000,000 by 1975-76 in terms of the purchasing power of 1975 dollars.

12. The present methods of financing the schools are unsound, wasteful of public funds, and unproductive in providing equal educational opportunities throughout the County.

13. Two plans for financing the schools are proposed. Unification of the two districts, the first plan, is considered to be the most efficient means for financing education. Under this plan the County and City debt for schools should be consolidated and the debt service paid from County and City receipts gained from the state capital outlay allotment, beer taxes, amusement taxes, and alcoholic beverage taxes. From these sources a capital outlay and debt service fund should be established for the purpose of paying the debt service on capital indebtedness and of providing current capital outlay funds. All school plants in the future would be financed by County-wide bond issues and/or current revenue. All operation and maintenance taxes under this plan should be County-wide and the City of Knoxville would discontinue all tax levies for schools.

14. The second plan, proposed in the event that univication in financing is unrealized, would depend upon contractual arrangements between the two districts. This plan is considered to be less efficient and more cumbersome than the plan for unification but much more desirable than the existing circumstances. Under this plan pupils would be permitted to attend the most accessible school without payment of tuition. Certain services such as transportation, types of special education, attendance services, types of vocational education, and adult education should be allocated to either the City or County for provision in the entire County. The debt service on rural school bonds would be paid from revenues of both County and City, the amounts to be paid by each district by proration according to the proportion of taxes collected from the sources given under the first plan. All

future school plant needs should be provided from proceeds of County-wide bond issues or County-wide tax levies and these proceeds allocated between the two districts in proportion to need as determined by competent survey at least every five years. All operation and maintenance taxes should be County-wide and levied by the County Quarterly Court and City school taxes discontinued. The allocation of proceeds should be made in reference to the current expense cost of the Foundation Program as calculated by the Tennessee State Department of Education and to the special services or programs provided by either the County of City for the entire County.

PART V. ORGANIZATION AND ADMINISTRATION

1. How well the school system of a district is organized and administered bears a strong relationship to the effectiveness and adequacy of the school programs which are made available. It is possible to evaluate school districts by the use of criteria derived from research and experience upon which authorities in the field of educational administration are in general agreement. Such criteria have been applied in this study to the Knox County and Knoxville school districts.

2. Legal prescriptions hamper the Knox County and Knoxville school systems. Both boards of education are subject to divided control. This is very poor administrative practice. Both boards of education are fiscally dependent. The budget of the City schools must be approved by the City Council and the County school budget must have the approval of the County Court.

3. The two boards of education have faced formidable problems in recent years. These problems were brought on by increases in school enrollments, the development of new areas of population concentration and by the demands for more and better education. Progress has been made in resolving these problems. But much remains to be done.

4. Both school systems are organized and administered according to accepted principles and practices within the restriction imposed by legal requirements such as election of the County superintendent of schools by popular vote and controls by City government of policy regarding financing the schools. Administrative and supervisory personnel are not sufficient in numbers for the responsibilities they face. Long term plans for educational development suffer as a consequence. Inadequate attention to research is another shortcoming. Thus, planning suffers.

5. Current school district lines impose serious obstacles to solving wisely the complex educational problems which face the metropolitan area. It should be emphasized that these are problems of the area and not merely of the existing school districts. No governmental or leadership structures currently exist with power to solve these problems at the level on which they occur. Solutions under present governments of the metropolitan area can only be piecemeal and fragmentary unless basic changes are made in structure and function. The further growth of the area can only increase educational problems unless a new and more creative approach is found.

6. Improvements in the schools are being made and have been made in the past. However, changes affecting all areas of living are underway in metropolitan Knoxville rendering obsolete current government organization and relationships which were designed for an era no longer in existence.

7. Current social and economic conditions, educational problems and needs and prospects for the future leave little choice other than to recommend merger of the two school districts. Effecting merger poses difficult problems within itself but they are by no means insurmountable. Some of the problems reside in

attitudes and allegiances of persons in the present districts. Others are legal problems which are of long standing. Merger of the school systems would be a step in the direction of modernizing government for the metropolitan area.

8. Combining the two school systems obviously offers the best solution to the new problems created by annexation as well as providing the best way of meeting the long-term and emerging needs which education should serve in the metropolitan area.

9. Another plan of action is proposed in case early steps toward merger are not to begin. This plan leads to ultimate merger and some of the steps proposed can be inaugurated at once.

10. In the event that the people choose to retain the two present school districts, some suggestions are offered for improving the schools within the limitations imposed by existing circumstances.

PART VI IMPLEMENTATION

1. Steps to implement Plan I are outlined, indicating the responsibilities of the various units of government and by the public in carrying out the smooth transition to a single, efficiently structured system.

Enrollment

PART I

MAJOR POPULATION, ECONOMIC AND SOCIAL CHARACTERISTICS AND PROSPECTS

Effectiveness and efficiency in public education require planning. One important requisite for sound educational planning is the identification of foreseeable changes and their attendant problems that are most likely to occur in the segments of living in an area and to affect the schools. And a second requisite, among others, is the assessment of the interrelations of the schools with these changing segments.

When changes are occurring, as they certainly are in the population, the economy, the social fabric, government and other segments, the schools are consequently affected. In turn, what the schools do, or do not do, affects these segments. Schools simply cannot be planned and operated as an isolated public service.

Changes in the various segments of living pose problems for education. How well the schools meet these problems shapes further changes in these segments. If, however, the schools are to have their greatest impact in shaping changes, they cannot be trailers of change. They must be at the forefront, or at least abreast, with other segments. To fulfill such a relationship and responsibility, planning faced toward the future is necessary.

More specifically, educational planning for Knoxville and Knox County obviously must be concerned with the numbers to be educated, where they will be, and with the needs these people have that can be served through educational programs. Some of these needs stem from economic and social sources. Accordingly, this part of the study report will present the quantitative population prospects to 1975 and also a brief description of some economic and social transitions that have important meanings for the planning of schools.

In so doing, this first part will afford a study basis for sketching desirable school programs over the coming years, for the designing and placement of school plants to house desirable programs where people will be concentrated, for determining the financial ability and support necessary to provide suitable education, and for establishing the most conducive structure, organization and administration to effective and efficient education.

The Population Outlook to 1975

Although time proves or disproves, several plausible generalizations can be augured for the next fourteen-year period.

1. The population of total Knox County may reasonably be expected to reach 307,000 by 1975.

2. The suburbanization movement in the metropolitan Knoxville area will continue. Several factors will further influence this movement: increased automobile ownership, and a general improvement of transportation and communication facilities; a desire of people to live in areas with more privacy, open space, new houses, more play space for children; a decreasing supply of available land for building purposes in older residential areas and a higher cost of land in those areas; and the displacement of additional persons by urban renewal and highway building projects.

3. The steady out-migration of people from Knoxville and Knox County in the 1950-60 decade to other sections of Tennessee and to other states will not abate greatly. The largest number of those leaving will be in the younger adult group who seek better opportunities elsewhere.

4. The proportion of older people, 65 and over, will probably increase. Between 1950 and 1960 the percentage of this group in the Knox County population rose from 6.4 to 8.1.

5. The school-age population of the total County will grow from 55,000 in 1960 to approximately 69,000 in 1975, about 14,000.

6. The "old" (1960) City of Knoxville will continue to lose population, decreasing to approximately 100,000 by 1975. The total school enrollment for the old City will reach its lowest point in the 1975 school year. The first grade enrollment is expected to reach the lowest number in 1970 with each succeeding grade reaching the lowest point one year later.

7. For the County schools, and in the newly annexed areas of the "new" City, the enrollment increase is expected to be gradual until 1968-69 when grade one is likely to rise sharply with each succeeding grade increasing sharply in the following years. Even with annexation, the remaining County schools and those that will have to be constructed will increase in enrollments. Annexation will affect little, if any, the numbers to be educated.

8. Should the economic activity of Knox County be augmented by industrial development, such as the Melton Hill Dam construction, the construction of the Bull Run Steam Plant, possible expansion of Atomic Energy Commission projects, and the development of an industrial park or sites in Knox County, the projected school-age population enrollments for the total County will need to be revised upward.

Past and continuing shifts in the general population of Knoxville and Knox County foretell changes in the school-age population.

Numbers to be Educated

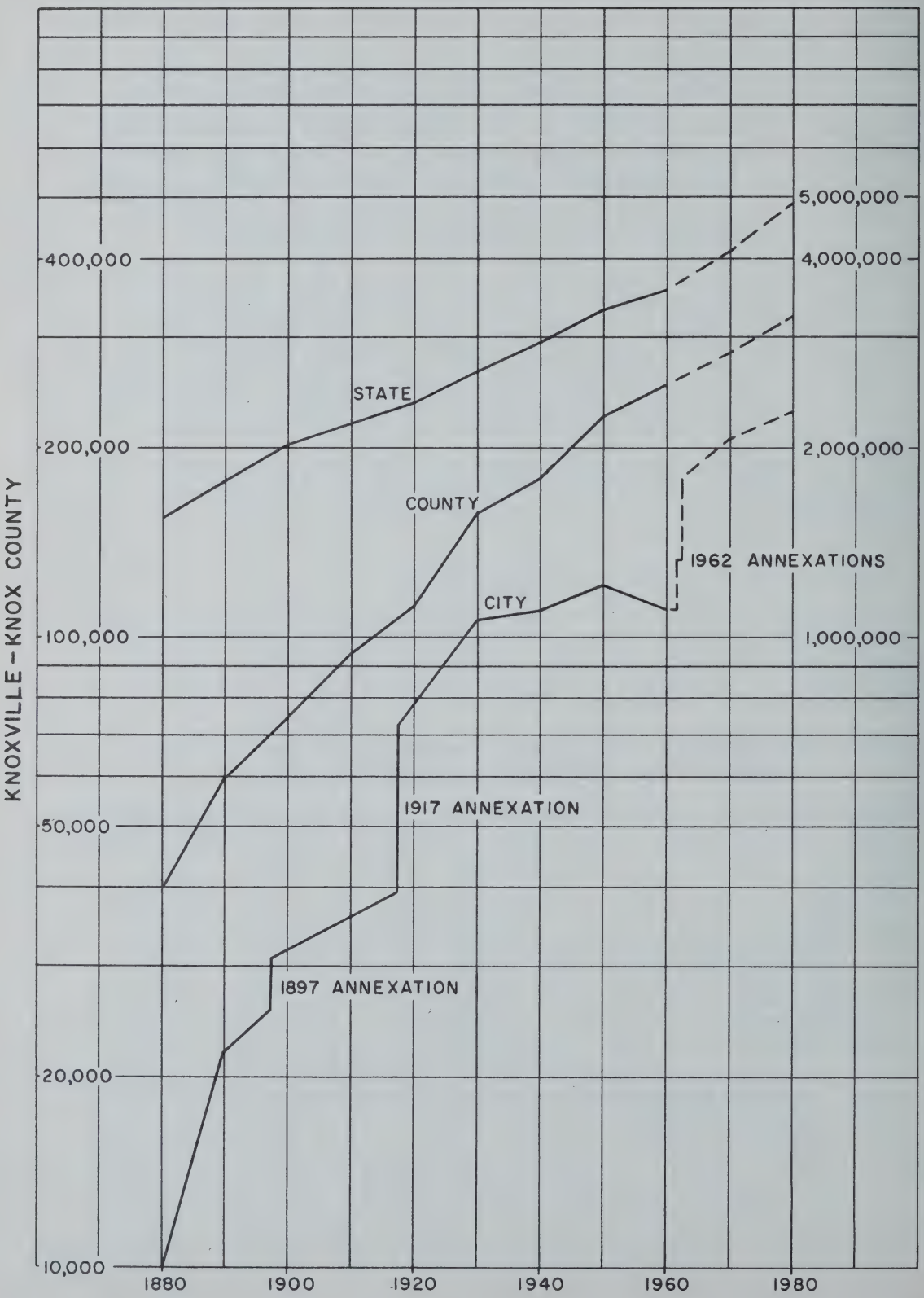
Knox County, as a whole, gained population between 1950 and 1960, but it had the lowest percentage gain in over 50 years. (See Figure I.) Also this modest gain compares unfavorably, except for Tennessee as a whole, with the gains for the United States and the other large metropolitan areas of the State.

Table I Comparison of Population Changes in Knox County with the United States, Tennessee, and Other State Metropolitan Areas, 1950-1960.

Areas	Number	Percent Change
United States	27,997,377	18.5
Tennessee	275,271	8.4
Knox County	27,516	12.3
County excluding City	40,458	41.2
City of Knoxville	-12,924	-10.4
Hamilton County	29,650	14.2
Davidson County	77,985	24.2
Shelby County	144,626	30.0

Source: Population documents, Knoxville-Knox County Metropolitan Planning Commission, 1961.

FIGURE I - POPULATION TRENDS 1880 - 1980



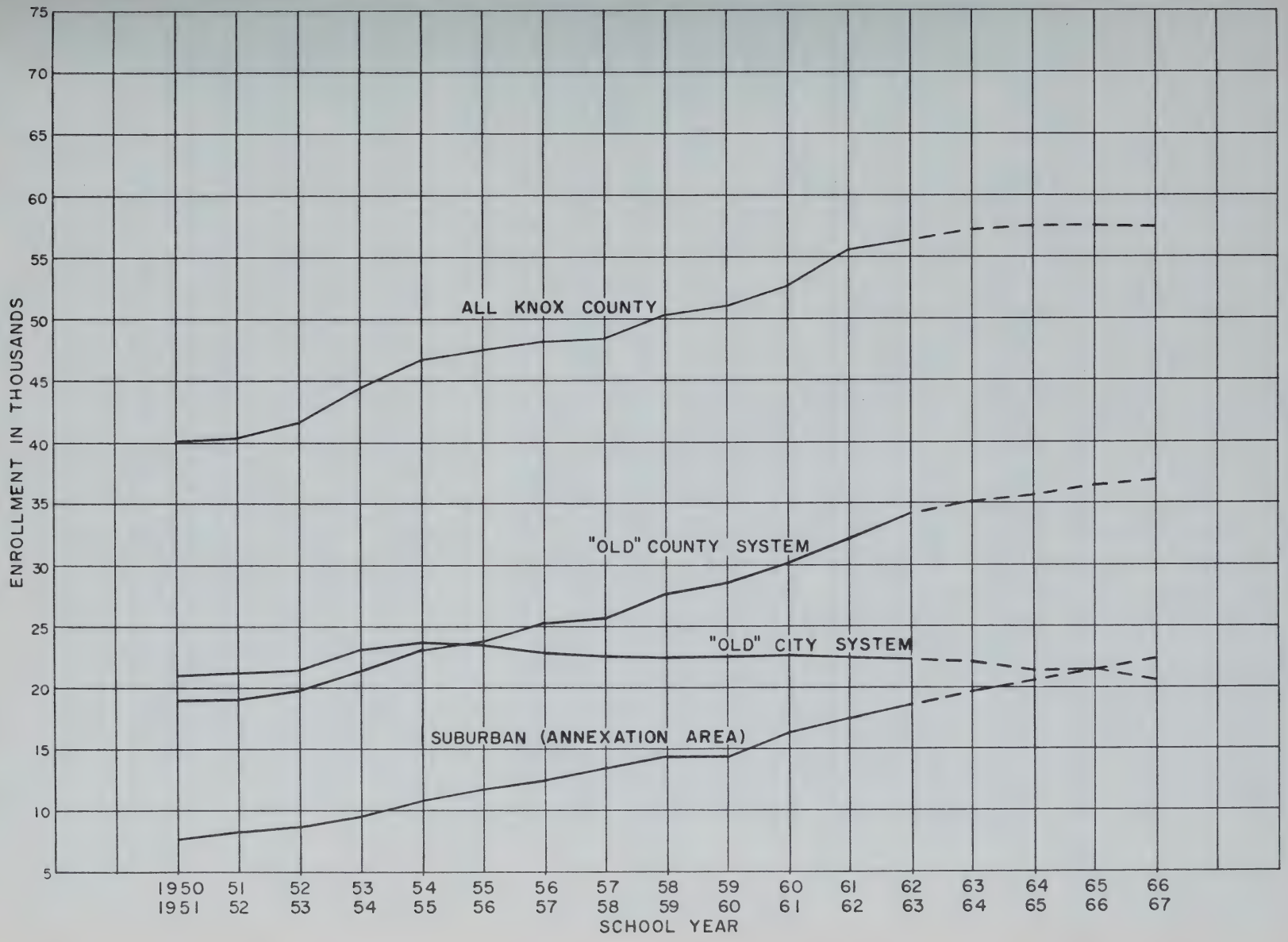
Knox County as an area has simply not kept pace and tends to reflect more the general picture of Tennessee than that of the United States and other metropolitan areas, with the possible exception of Hamilton County. Of the State's increase (275,371) Knox County had 10 percent, Hamilton 10.7 percent, Davidson 21 percent, and Shelby 54 percent. A more specific fact adds weight to this condition. Although the 1960 enumeration shows an increase of 12.3 in Knox County, the natural increase exceeded the numerical increase by over 9,000 persons, indicating an out-migration from the County of about 9,300 individuals. Those who left are judged to be mainly in the young adult group (ages 20-34), ones to gain the most by leaving and also to have more babies and young children living at home, thus reducing the rate of increase in the area departed.

Projected School-Age Population

At the time population projections were made initially in this study the boundaries of the City of Knoxville had not been altered by annexation. (See Figure II). As the study progressed, however, an enlarged City had essentially become a *fait accompli*, and this revision was incorporated into the projections of school-age population. Though the total number of children ages 6-17 would not be affected, obviously the number in each of the two school systems would be modified. The changes within the former areas of the two systems before annexation, particularly in the "old" City, were of a nature that projections for the "old" systems needed to be kept and portrayed for planning purposes. For example, in the "old" City only one area (12) could expect an increase in school-age population, three (1, 8, and 15) would remain about the same, and all of the others would experience a decrease, some a substantial decline. (See Table III). Likewise, the annexation of territory by the City would affect greatly not only the school-age population in certain sectors of the County but also the planning for remaining and new schools, expecially in such matters as buildings, transportation and financing. Accordingly, Tables II through VI reveal projections of school-age population for the two systems on both pre-annexation and post-annexation bases.

Whereas before annexation the County school system could expect an increase in school age population of 16,173 from 32,684 in 1960 to 48,857 by 1975, the City would experience a loss of 2,141 for the period.

FIGURE II — KNOXVILLE-KNOX COUNTY PUBLIC SCHOOL ENROLLMENT 1950-67



Under the annexation of 1962, the County will have 8,039 less school-age population in 1975 than in 1960, dropping from 32,684 to 24,645, though increases will continue to occur in every sector of the remaining "new" County system.

With the annexed territory the new City system will have an increase of 23,135 from the 1960 number of 22,485 to 44,620 in 1975.

Whatever the subsequent arrangements for educating the school-age population in the Knox County metropolitan area, planning of a high caliber will be required just to accommodate an overall (25.4 percent) increase of 14,086 from 55,179 in 1960 to 69,265. But school-age numbers are not the only factor to beg attention in educational planning. Enrollments and school attendance are important.

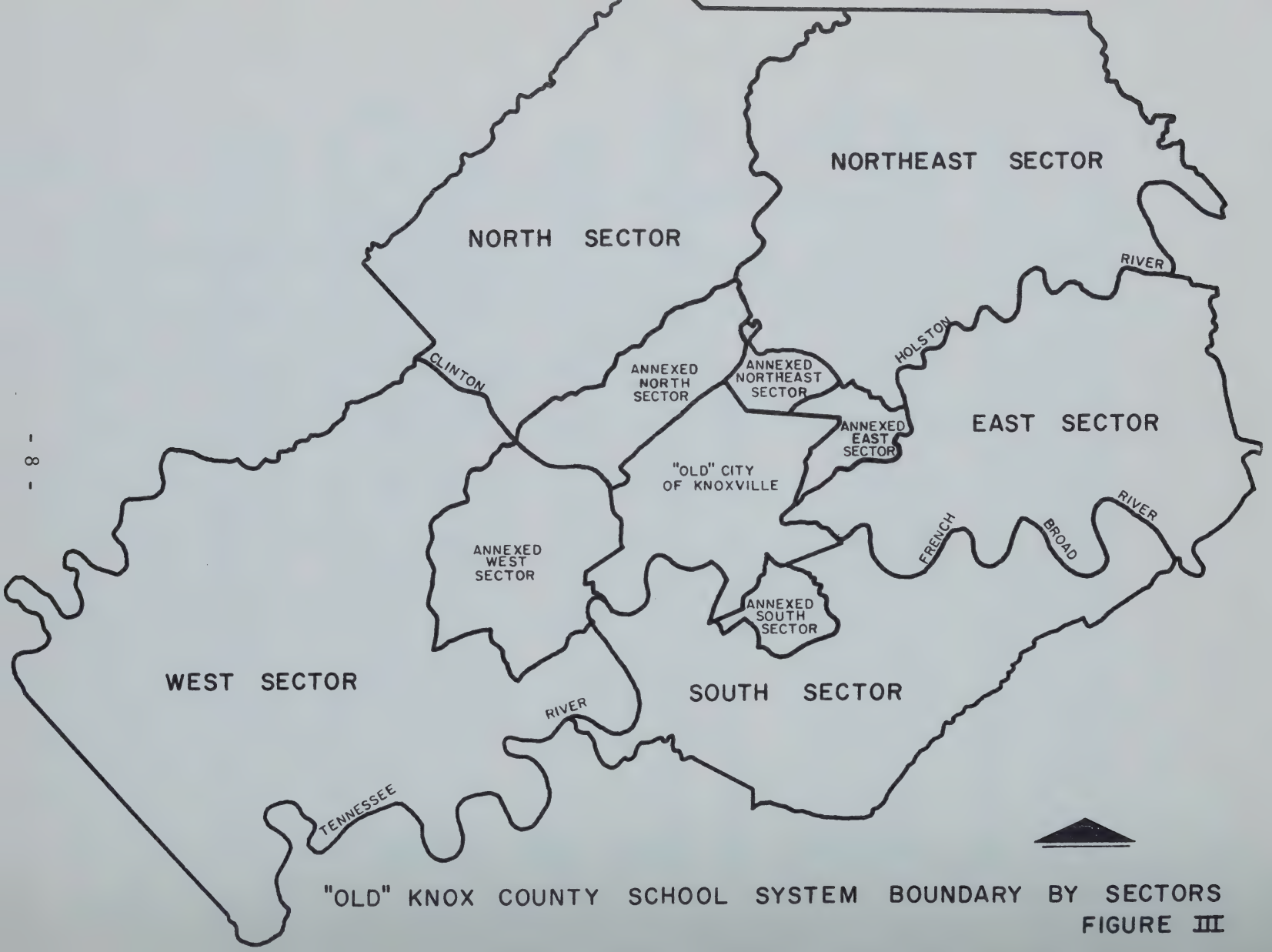
Enrollments and Average Daily Attendance

Of the 32,684 school-age population in the Knox County system in 1959-60 a total of 31,259 or 95.6 percent were enrolled in school. The average daily attendance was 28,579 or 91.4 percent of enrollment.

In 1960 the City system had a school-age population of 22,485 and an enrollment of 22,228 or 98.8 percent. Of the number enrolled 19,810 or 89.1 percent were in average daily attendance.

Both the County and City have done especially well in the high percentage of school-age children enrolled in school and the percentage of enrollments in average daily attendance. In 1959-60 the average percentage of school-age population enrolled in school for the United States was 83.6 and for Tennessee 88.5. The percentage that average daily attendance was of enrollment for the United States was 88.7 and 91.1 for Tennessee. The percentage for the County and City combined was 96.9 of the school-age population enrolled and 90.4 of those enrolled in average daily attendance.

Projections of enrollments and average daily attendance have explicit value in planning school programs, physical facilities and school financing. Knox County as a whole may expect the following enrollments and average daily attendance.



"OLD" KNOX COUNTY SCHOOL SYSTEM BOUNDARY BY SECTORS
FIGURE III

Table II. Projected School-Age Population of Knox County* By Sectors and Age Groups, 1960-1975

Sector **	1960		1965		1970		1975		Change 1960-75	
	6-13	14-17	6-13	14-17	6-13	14-17	6-13	14-17	6-13	14-17
West	6,438	2,430	8,509	3,212	10,581	3,992	12,627	4,800	6,189	2,370
North	7,079	2,740	7,864	3,034	8,650	3,328	9,557	3,676	2,478	936
Northeast	3,266	1,297	3,605	1,384	3,884	1,471	4,292	1,590	1,026	293
East	2,980	1,280	3,116	1,341	3,255	1,400	3,404	1,467	424	187
South	3,710	1,464	4,179	1,672	4,648	1,858	5,294	2,090	1,584	626
Totals	23,473	9,211	27,273	10,643	31,018	12,049	35,174	13,623	11,701	4,412

* Excluding "Old" City of Knoxville.

** See Figure III

Source: Population document, Knoxville-Knox County Metropolitan Planning Commission, 1961. (See Appendix I)

FIGURE IV – "OLD" CITY OF KNOXVILLE SCHOOL SYSTEM BOUNDARY BY AREAS AND ANNEXED SECTORS

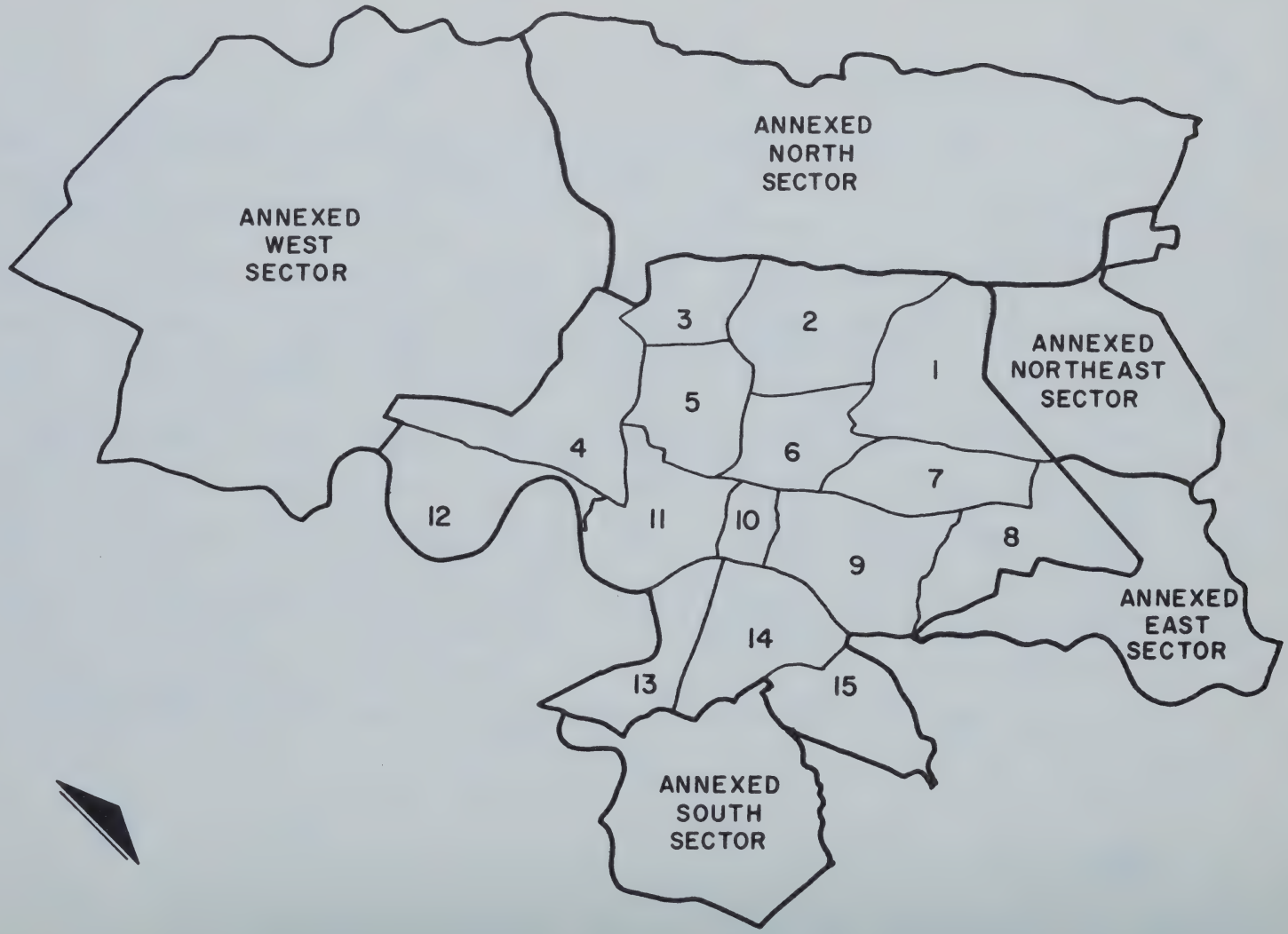


Table III. Projected School-Age Population, 1960 City of Knoxville, 1960-1975

AREA *	1960		1965		1970		1975		Change 1960-75	
	6-13	14-17	6-13	14-17	6-13	14-17	6-13	14-17	6-13	14-17
1	1,658	743	1,673	749	1,659	743	1,663	745	5	2
2	1,222	585	1,210	579	1,188	569	1,143	547	-79	-38
3	1,049	381	1,066	387	1,065	387	979	356	-70	-25
4	897	365	867	353	853	347	767	313	-130	-52
5	2,574	1,110	2,591	1,118	2,516	1,085	2,392	1,032	-182	-78
6	1,141	587	1,117	575	1,065	548	1,003	516	-138	-71
7	613	326	603	321	567	302	517	275	-96	-51
8	1,055	443	1,055	443	1,056	443	1,057	444	2	1
9	1,940	794	1,479	650	1,343	590	1,347	592	-593	-202
10	92	60	88	57	70	46	63	41	-29	-19
11	746	403	673	364	617	333	582	315	-164	-88
12	692	272	719	283	762	299	843	331	151	59
13	591	239	513	232	552	223	501	203	-90	-36
14	532	255	534	258	533	255	532	255	---	---
15	779	341	789	345	778	341	780	341	1	---
Totals	15,581	6,904	15,040	6,714	14,624	6,511	14,169	6,306	-1,481	-660

* See Figure IV

Source: Population document, Knoxville-Knox County Metropolitan Planning Commission, 1961. (See Appendix I)

Table IV Projected School-Age Population of Knox County Areas Annexed 1962 by City of Knoxville, 1960-1975

Annexed Sector*	1960		1965		1970		1975		Change, 1960-1975	
	6-13	14-17	6-13	14-17	6-13	14-17	6-13	14-17	6-13	14-17
North	4,891	1,725	5,159	1,918	6,166	2,113	6,787	2,291	1,896	568
Northeast	1,039	370	1,181	520	1,324	471	1,481	526	442	156
East	1,172	490	1,208	506	1,244	520	1,284	537	112	47
South	1,296	485	1,439	539	1,582	592	1,740	651	444	166
West	3,606	1,247	4,745	1,626	5,886	2,004	6,606	2,242	3,000	995
Total	11,993	4,317	14,132	5,008	16,202	5,700	17,898	6,247	5,905	1,930

Source: Population documents, Metropolitan Planning Commission, Knoxville, 1961.
Note: Annexed Areas Approximate the County areas listed.
* See Figure III.

Table V. Projected School-Age Population of Knox County* by Sectors After 1962 Annexation, 1965-1975

Sector**	1960		1965		1970		1975		Change, 1960-75	
	6-13	14-17	6-13	14-17	6-13	14-17	6-13	14-17	6-13	14-17
West	6,438	2,430	3,764	1,587	4,695	1,988	6,021	2,558	- 417	128
North	7,079	2,740	2,749	1,194	3,016	1,309	3,480	1,510	- 3,599	-1,230
Northeast	3,266	1,297	2,076	838	2,301	870	2,101	939	- 1,165	- 358
East	2,980	1,280	1,908	835	2,011	880	2,120	923	- 860	- 357
South	3,710	1,464	2,740	1,133	3,066	1,266	3,554	1,439	- 156	- 25
Total	23,473	9,211	13,237	5,587	15,089	6,313	17,276	7,369	- 6,197	- 1,842

* Excluding 1960 City of Knoxville and City Annexed areas for 1965, 1970, and 1975.
** See Figure III.

Table VI. Projected School-Age Population of New (1962) City of Knoxville, 1965-1975

Area*	1965		1970		1975	
	6-13	14-17	6-13	14-17	6-13	14-17
Old City	15,040	6,714	14,624	6,511	14,169	6,306
Annexed	14,132	5,008	16,202	5,700	17,898	6,247
Total	29,172	11,722	30,826	12,211	32,067	12,553

* See Figure IV

Table VII. Projected Enrollments and Average Daily Attendance

Year:	1956-66		1970-71		1975-76	
Age Groups:	6-13	14-17	6-13	14-17	6-13	14-17
Enrollments*	43,044	14,609	45,289	16,187	50,973	15,976
Total Enrollments:	57,664		61,476		66,949	
A. D. A.	53,283		55,633		60,522	

* Population documents, Knoxville-Knox County Metropolitan Planning Commission, 1961.

The County in 1975-76 will have an increase of 12,312 in enrollment and an increase of 10,302 in average daily attendance over the numbers in 1960-61. A slight decrease in high school enrollment between 1970-71 can be expected as can a small decrease in high school average daily attendance for that period. More detailed projections in terms of average daily membership will appear in Part III of this report as a basis for analyzing school plant needs.

Now Attention is given to another important characteristic.

Educational Levels

In a period when living, citizenship participation, and employment are requiring more and more education, the level of school attainment becomes increasingly important. In 1960, total Knox County had 15,720 people 25 years old or over who were functionally illiterate (4th grade or less). When using the more recent criterion of 6th grade or less, as mentioned in pending Federal legislation, the number of functionally illiterate individuals in the County rises to 30,023, roughly 20 percent of the population 25 years old or over. Little comfort is to be gained by comparisons with other areas, and certainly the social and economic import of a large number of people in a population who can at best read and write only on a primary or intermediate school level is well known.

Moreover, the Knox County metropolitan area, though gaining moderately in school attainment level, has been losing ground.

Table VIII. Median Education Levels (Grade) for the United States, Tennessee, and State Metropolitan Areas, 1950-1960.

Area	1950 Medians			1960 Medians		
	Male	Female	Combined	Male	Female	Combined
United States	9.0	9.6	9.3	10.7*	11.2*	11.0*
Tennessee	8.3	8.6	8.4	8.6	9.0	8.8
Knox County	8.8	9.0	8.9	9.7	10.2	10.0
Davidson County	9.0	9.7	9.4	9.9	10.6	10.3
Hamilton County	8.6	8.8	8.7	9.7	9.9	9.8
Shelby County	9.2	9.9	9.6	10.1	10.7	10.4

Sources: * These figures are for 1959, taken from Current Population Reports, U. S. Department of Commerce, Series P-20, No. 99, February, 1960.

The 1960 median for the United States not available on March 1, 1962.

The other medians taken from U. S. Census of Population, Volume II, Part 42, 1950, and U.S. Census of Population, Volume I, Parts C and D, 1960

The level of school attainment for the United States has increased over one grade in each of the two decades from 1940-1960. In 1950 the Knox County level was 0.4 of a grade below the national median, but by 1960 the County median was one full grade below the national average even for the preceding year (1959). Thus, the area has not been keeping stride in its school attainment. One index to this circumstance is that Knox County as a whole in 1960 had over one out of five persons 16 and 17 years of age not enrolled in school. These conditions perhaps in part reflect the strong probability that the outmigrants of the 1950 decade were the better educated of the young adult group.

The Economic Picture

The construction and operation of enterprises such as the Aluminum Company of America plant, the Tennessee Valley Authority, and the Atomic Energy Commission facilities at Oak Ridge gave an economic boost to Knox County and the metropolitan area during the 1920's, the 1930's, and the 1940's. But in the ten years of the 50's comparable installations did not come upon the scene to provide an economic lift, and employment patterns shifted considerably.

Changes in Employment

In many respects, Knoxville and Knox County cannot be viewed as separate entities in the economic complex of a metropolitan area. What may happen in one part, such as Anderson County or Blount County, affects all of the area.

The employment of non-farm wage and salary workers in the total area rose 5.1 percent from 1948-50, and in Knox County the increase was 17.6. However, more important shifts occurred within employment classifications. Both the total area and Knox County declined in the number employed in manufacturing. Within manufacturing employment, Knox County dropped in the manufacture of both durable and non-durable goods while the area as a whole had a decline only in the manufacture of durable goods. (See Table IX.) In the area outside of Knox County, employment in the manufacture of non-durable goods rose slightly more than 9 percent. Thus, the increase in non-farm employment for the area and for Knox County came in non-manufacturing occupations. More specifically, the increase in Knox County occurred entirely in the "producing services" of government, finance, insurance, real estate, wholesale trade, retail trade, and services, the largest single increase occurring in "government". (See Table X.)

Consequently, the area and Knox County have "growth industries" and "declining industries".

Whether this employment picture continues hangs upon several factors, one of which is the aspiration of the people and effective effort in planning for the achievement of those aspirations. Whatever transpires, either by chance or design, education will be affected, not only in support generally but in the kinds of programs offered, particularly those of a vocational or technical nature. In turn, what is done in education will substantially influence the economy.

Table IX. Changes in Non-Farm Employment of Wage and Salary Workers for Knox County and Metropolitan Area,* 1960 Over 1948.

Employment Groups	Number Employed in Area, 1960	Change in Number	Percent Change	Number Employed Knox County, 1960	Change in Number	Percent Change
Manufacturing						
Durables	12,500	— 4,200	— 25.2	6,500	— 400	— 5.8
Non-durables	29,600	2,500	9.2	14,300	— 500	— 3.4
Total	42,100	— 1,700	— 3.9	20,800	— 900	— 4.2
Non-manufacturing	70,800	7,200	11.3	56,000	12,500	28.4
Total Non-farm	112,900	5,500	5.1	76,800	11,500	17.6

* Area includes Knox, Anderson and Blount Counties.

Source: Economy tables, Metropolitan Planning Commission, Knoxville-Knox County, Tennessee, 1962.

Table X. Changes in Non-Farm Employment of Wage and Salary Workers in Growth and Declining Industries for Metropolitan Area, 1960 Over 1948.

Employment Groups	Number Employed in Area, 1960	Change in Number	Percent Change
Growth Industries			
Producing goods			
Manufacturing non-durables	29,600	2,500	9.2
Construction	6,800	1,300	23.2
Total	36,400	3,800	10.9
Producing services			
Government	13,700	2,900	26.9
Finance, insurance, real estate	3,800	1,700	81.0
Wholesale trade	6,100	1,500	32.6
Retail trade	16,600	800	5.1
Services	15,700	800	5.4
Total	55,900	7,700	15.9
Total Growth Industries	92,300	11,500	14.2
Declining Industries			
Producing goods			
Manufacturing durables	12,500	— 4,200	— 25.2
Mining	1,600	— 1,100	— 40.7
Total	14,100	—5,300	— 27.3
Producing services			
Transportation, communication, utilities	6,500	— 700	— 9.7
Total Declining Industries	20,600	— 6,000	— 22.5
Total Non-Farm	112,900	5,500	5.1

Source: Economy documents, Metropolitan Planning Commission, Knoxville-Knox County, Tennessee, 1962.

The level of income is related to levels of education and to industrial development.

Changes in Income

In 1960 the national average of per capita disposable income (income after taxes) was $1,974. For Knox County the average was $1,602.[1] The difference of $372 placed Knox County roughly 20 percent below the national norm and below the average reached two years earlier (1958) by other Southern cities such as Birmingham, Memphis, New Orleans, Baltimore, Atlanta and Louisville.[2] Knox County was only about 8 percent above the average for the entire Southeast in 1960, and although increases have been realized, no gain on the national average is being achieved. Actually the relative position of Knox County, both dollar-wise and percentage-wise, declined between 1950-1960. (See Table XI.)

Table XI. Effective Buying Income Per Capita for Selected Metropolitan County Areas and the United States, 1950-1960.

Area	1950	1960	Dollar Change
Baltimore	$ 1,505	$ 2,066	$ 561
Atlanta	1,357	2,062	705
United States	1,311	1,974	663
Louisville	1,433	1,915	482
Nashville	1,390	1,903	513
Birmingham	1,086	1,852	766
Memphis	1,461	1,791	330
KNOXVILLE	1,239	1,582	343
Chattanooga	1,247	1,576	329

Source: Sales Management, May 10, 1961.

In the decade, the average per capita effective buying income in the United States advanced 50.5 percent; the advance in Knox County was 28.4. The fact that Chattanooga was in a slightly less-favored position provides small solace.

Prospects of the Economy

The percentage increase for Knox County is likely to decrease over the years to 1975.

Table XII. Projected Disposable Income Per Capita and Percent Changes, 1960-1975.

1960	1965	Percent Increase	1970	Percent Increase	1975	Percent Increase
$1,602	$1,905	18.9	$2,190	14.9	$2,475	12.9

Source: Economic documents, Metropolitan Planning Commission, Knoxville-Knox County, Tennessee, 1962.

In the years during and following World War II, the area was able to ride the crest of national economic growth, to keep pace or to gain slightly. But in the 1950's the stride-for-stride developmement was unrealized. As in some other parts of the South, manufacturing employment in Knox County and the metropolitan area did not expand vigorously. Instead, a decrease occurred with an accompanying, relative small increase in population and an out-migration of people in the young adult groups seeking better opportunities elsewhere. Many of the war and postwar conditions favorable to the area are no longer operative in determining the strength or growth of the economy. And improvement will take more than tax concessions or plants financed through public credit to induce economic expansion.

New and better employment opportunities, involving more highly trained manpower, will be necessary. The standard appeals of nearness to markets, good transportation, and a potentially large labor force will not suffice to bring industrial development in the years ahead. Inducements such as high labor skills, research opportunities, and adequate educational programs and facilities must be offered. Succinctly, education will play a determining role from here to the future in the area's effort to improve its position.

In addition, "Judging by recent trends, there are likely to be more new job opportunities throughout the nation for those who work with their minds than for those who work solely with their hands. If the pattern of the immediate past continues, the greatest growth in employment will be among the professional and technical workers and may take place outside manufacturing itself."[3]

A continuation of recent trends in Knox County and the metropolitan area indicate already the movement toward service industries with jobs other than agriculture, durables-manufacture, construction and mining. To what extent and at what levels these are developed will determine income. In this development education will have an unmistakable part to perform.

The role that education is to play is also conditioned by changes occurring in the social and cultural fabric of the County and area. Though no detailed analysis of the current societal and cultural cloth of Knox County could be made for this study, interviews and conferences with informed persons and some data do lead to several tenable generalizations that have importance for education in the future.

The Social and Cultural Scene

Many years ago differences in rural and urban orientations and values were manifest in the establishment of city systems for education and rural systems for schooling in the surrounding areas. This differentiation still lingers in many places and has its outcropping in expressions to the effect that education in the cities is better and should not be lowered to accommodate others outside. And generally educational opportunities in city systems have been greater.

Decades ago the higher socio-economic groups were residents in the cities, but recent transitions have revised this condition. The movement to the suburbs, the outlying areas, has been made by the more socially and economically affluent. The old central cities, usually decreasing in population, have been inhabited by those of lower socio-economic means. Many of those tenanting the residences vacated by the suburban-bound numbers are from rural areas in adjoining or nearby counties. Those moving into metropolitan areas from urban areas in other states, and representing skilled, professional and managerial pursuits usually settle in the suburbs. In considerable measure, the earlier circumstance is reversed.

Diversity and Neighborhood Likenesses

Many people moving from rural areas, leaving little more than a survival level, are not well prepared educationally, economically, or culturally to live in a metropolitan complex.

They generally have had less education, frequently a lower quality of schooling, and limited occupational preparation and experience.[4] Those highly trained persons who come from other urban centers have been accustomed to complex organization and to a range of services in public and occupational life. Their education is generally higher and their schools of better quality. They have been accustomed to opportunities and social services of a high order, and this is the reason that industries, businesses, and producing services which require well prepared personnel are increasingly interested and curious about education and schools before locating in any area.

While more diversity characterizes metropolitan growth as a whole, people of similar interests, modes of living, and aspirations cluster in the same general residential areas. The result is neighborhood similarities and inter-neighborhood variances. Because of the growing diversity of the range of backgrounds, interests and experience, a broader scope of education is demanded. Because of the variations and differences among neighborhoods, needs to be served by individual schools will vary.

Home and Family Patterns.

Changes in home and family living are occurring. Perhaps Leonard Bernstein's operetta, "Trouble in Tahiti", overemphasizes some modes and conditions of suburban living, but perhaps also it reveals a substantial analysis of transitions in home and family life in suburbia.

For many people the home is now something of a dormitory, its members spending little time together as a family. Many wives and mothers are joining the labor force. Of the 95,944 women in Knox County in 1959, nearly 51,000 had income. This does not mean all of the 51,000 were working, but most of them undoubtedly were. Fathers are frequently away on business or in increasing numbers of meetings. Under these conditions permissiveness rather than companionship is often the attitude toward children.

Some children will not have the customary home. The number of live births to unwed mothers does not seem to be decreasing. Nor is the number of broken homes or abandoned family responsibilities.

If children need a sense of security, direction, belongingness and acceptance and this need is expected to be served in part by the schools, then programs of education must include conscious emphases upon relationships, values and goals of the individual.

Anti-Social Behavior

A growing concern of many individuals and groups is the incidence of crime, delinquency, and other forms of atypical social behavior.

Offenses in some categories of crime in Knoxville and Knox County have declined, but in other categories the increase has been substantial. In the 1950-60 period auto thefts increased in the City by 75 percent and cases of burglary, breaking and entering, increased 60 percent. In 1960-61 alone, the County had 203 cases of aggravated assult. Juvenile crimes and other anti-social behavior are not confined to particular ethnic groups nor to low income families. Frequently, offenders come from families with substantial incomes and from so-called better neighborhoods. However, poverty, inadequate housing, lack of recreational facilities, and poor home and family living make their contributions to delinquency and crime. Anti-social behavior occurs also in the schools. Some teachers must spend an inordinate amount of time and effort with violently aggressive and disruptive youth to the neglect of the other children and youth.

Programs of education should be expected to face the need for dealing with the problems of socially unacceptable and personally inadequate behavior, to develop understandings of the reasons, and to work with other agencies in minimizing it. The cost of prevention will be less than the social and economic loss resulting from inattention.

Health and Welfare

A growing major health problem is mental illnesses. Roughly 25,000 in the County and City by 1975 will have mental or emotional illness calling for treatment or hospitalization. These illnesses are related to growing anti-social behavior finding manifestations in delinquency and crime, problem alcohol

cases, and in most cases, a lowered personal productivity on the job. Emotionally disturbed children are a serious concern of many teachers in the school systems, especially since about 10 percent of the pupils will need assistance from sources other than classroom teachers.

Various studies point to a direct relationship between the amount of income an individual earns and the amount of his education. Thus, a predominant number of welfare cases and expenditures for them are for people at low education levels. The high number of functionally illiterate people in Knox County, stated previously, is the source of greatest welfare costs that show up in various ways. The City and County governments contributed $1,204,303 for indigent patient care at the University of Tennessee Hospital in 1960, covering 31,118 indigent patient days, 33,310 out-patient hospital visits and 6,207 emergency visits.

Other Transformations

Beyond the borders of the metropolitan area, as well as within it, are forces and influences that shape and alter the needs for education.

Expansion of Knowledge

A commonplace reference to the tremendous expansion of knowledge in recent years is made in the term "explosion". Knowledge is growing in such vast amounts that no one person can comprehend all of it. Knowledge today is ofter superseded or displaced by new knowledge tomorrow. It is difficult to keep abreast of these expansions and to determine what is significant and what is not. The teachers and schools must keep abreast of new significant findings through continuing preparation and the revision of curricula.

Closer Contact with Other People

The United States has become the leader for a sizeable proportion of the world's people. Our foreign policy and commitments now necessitate understandings of people everywhere, their aspirations and values, their cultures and societies. The schools have the responsibility of providing opportunities for students to develop knowledge and understandings of people about whom little

was known a few years ago. This responsibility has special meaning for the social sciences and modern foreigh languages even on the elementary school level.

Growth of Technology

Technologies of great magnitude and variety, missiles, rockets, satellites, plastics, alloys, fuels, energies, machines, and entire industries have been born. Automation increases rapidly, often displacing workers. Specialization in practically every human endeavor is mounting, specialization in ways of earning a living in the world of industry, trade and commerce, the professions, government and other fields. Education has the task of both general and specialized preparation of people. In increasing numbers, people will require retraining and all can profit from some form of continuous schooling.

Shifts in Culture Patterns

The impact of general transitions in our culture has consequences for people in a metropolitan area. Our value dedications have been undergoing changes, thus what is important to people is changing. People in an area seeking to accommodate change are usually characterized by conflicts, confusion, disorganization and indirection. Displaced hostility is common and is often expressed in bickerings in the political arenas. Cooperation and compromise, in its best meaning, are usually very difficult to effect. The schools find themselves trying to embrace an increasing diversity of personal and group appeals, clamors, and conflicts that have only peripheral importance to sound education. Clarifying what the schools are to achieve is difficult but the need to do so is great under these circumstances.

With particular reference to Knox County, if credence can be put in the most informed sources, kinds of rustic attitude patterns persist and conflicts are plentiful. In-migrants, even those highly educated and trained professionals, are looked upon in some quarters sometimes as intruders. And outsiders should not be making suggestions since they have not lived long in the area and, therefore, do not understand. The long standing rural-urban, County-City dichotomies ignore the fact that the area has become interwoven, complex and interdependent. Presumably, kinship allegiances still run strong in public affairs. These

attitude patterns, if true, may help explain what competent observers consider to be a general lack of understanding, or in more severe form a doubt, of the value of education.

An Increasing and Mobile Population

Populations are mounting in the United States and throughout the world. People now live longer and a larger proportion of older persons comprise our population. Our people are more mobile and migratory each year. Nearly a third of our population lives in states and regions other than those of birth. Cities draw people from the farms and villages. An estimate has been ventured that by 1975 three-fourths of our labor force of 100,000,000 will live in urban areas and about 25,000,000 of these urbanite workers will be women.[5] Already in many schools, teachers find their classes composed of children with widely varying backgrounds and of many different faces from one month to the next. This condition alone calls for a broader and more flexible school program, often different scheduling, varying organizational patterns, and widest use of teaching competencies.

A Quest For Quality in Education

Even the casual reader and listener senses a renewed public interest in "better" schools and education. Our expectations outreach current educational provisions. The schools are never quite good enough because our society is changing rapidly. And the quest for a better quality of education has intensified in recent months. This quest is not a new turn, only different in form and emphasis.

Curriculum: When people in colonial times decided it was more efficient to take a part of their children's education out of the home into a classroom and to employ the most schooled person in their midst as teacher, they were in quest of quality. When responsibilities later devolved upon the people for their government, subjects such as civics were added. When certain social problems arose, "alcohol education" and "narcotics education" became fashionable. When injuries and deaths mounted with greatly expanded ownership and use of automobiles, "safety education" and"driver education" were added.

Teachers: As new knowledge and courses were added, teachers were called upon for more and more preparation. In earlier times, the teacher knew more about the subject taught than other members of the community. But as more people became schooled and educated in special fields, some people in the community came to know more about a particular subject than the teacher. Thus, quality of teachers came to be associated with a general knowledge and with one or more specialized fields and with a school staff which as a whole could consequently cover an expanding number of subjects. Today suggestions and also trials are being made to augment a school staff with part-time use of members of the community who have special skills and knowledge to contribute.

Facilities: Buildings that will house various activities and programs, structures quite different than "the little red schoolhouse," are seen everywhere. In some schools there are television sets, teaching machines, programmed materials, films, overhead mirrors and projectors, well equipped laboratories and other resources to quicken the heartbeat of any teacher. Libraries have learning materials of design, color, print and coverage unknown a few years ago. But some do not have these aids. Cafeterias have generally replaced the poke and cornpone. In most areas the consolidation of schools within a system is a means used to provide better education; in some areas, mergers of districts have been utilized.

Purpose: Arguments and discussions on what the schools should accomplish and do are continually taking place. With mounting complexity in our living, new knowledge, rapid transformations in our social order, more specialization and many other kinds of transitions, education is expected to improve its quality in terms of assisting people to meet their emergent problems and demands. Hence, a need is apparent for a widespread re-examination of goals, of what education should seek to achieve in these times. The formulation of clearly defined goals is the key to the quest for quality and to the assessment of quality and thus a need to be met wherever educational advancement is sought.

Some Important Implications For Educational Planning

In the period to 1975, shifts in the general population and consequently movements in the school-age population will

necessitate advanced planning for the provision of schools and educational programs. A substantial increase in numbers of school-age children will have to be accommodated. Physical facilities, transportation, auxiliary services, financing, and organization will demand careful planning.

The educational levels and characteristics of the present population, which compositely is losing ground, will require additional provisions for continuing education and training if the area is to attain a more favorable position educationally, economically and socially.

The trends in employment prophesy vocational and technical education of an increasingly higher order.

Social and cultural transitions occurring in the United States, as well as within the metropolitan area, will call for revisions in school programs, including the clarification of goals, the re-examination of curricula, and the use of professional personnel.

The interdependence of economic, social and governmental affairs of the metropolitan area pleads for some kind of conjoint or unified planning and leadership for the schools. Though boundaries of governmental and district areas may change further, the problems of providing the best possible education will not be contained or alleviated by the re-arrangement of geographic lines alone.

The major population, economic and social characteristics and prospects set forth in this part of the study may cast a somewhat discouraging pallor for the future. Whether a color, or symptoms, of poor health continue will be decided by what people want to do, what they actually do, and how well they plan and use the resources already available to them.

Knoxville and Knox County have many excellent nutrients for advancement. Within these borders is one of the fine institutions of higher learning in the United States, the University of Tennessee, and Knoxville College has long contributed much to the preparation of people for a variety of services. Some of the most highly trained and educated persons in the nation and world live and work in the area. Remarkable research, laboratory and hospital facilities are present. The personnel in public education must be generally dedicated

professional people who want to assist children and youth attain more of their potential. Latent and able civic leadership seems to be stirring in many quarters. Reasonable financial resources are available. A pioneering spirit of earlier years, for it was in this area that public education was first most vigorously advanced in Tennessee, appears undulled in many people. When all of these assets, and many more could be cited, are mobilized in harmony on the problems to be overcome, Knoxville and Knox County can move to unbelievable advancements.

To identify more clearly and specifically one of the problems in educational planning in the years ahead, attention is given in the following part of this report to school programs and their development.

Text References

[1] Sales Management, May 10, 1962.

[2] "A Proposed Development Program for the Atlanta and Fulton County Public Schools," A Report to the Education Council of the Local Education Commission of Atlanta and Fulton County, Atlanta, 1960.

[3] "Monthly Review," Federal Reserve Bank of Atlanta, Atlanta, February, 1962.

[4] Raising the Income and Productivity of the South, Bulletin No. 31, Legislative Research Commission, Commonwealth of Kentucky, Frankfort, 1961.

[5] Reprint, "The Fabulous Fifteen Years Ahead," Changing Times, The Kiplinger Magazine, Washington, January, 1961.

Program

PART II

CHARACTERISTICS OF DESIRED AND CURRENT EDUCATIONAL PROGRAMS

The future success and welfare of the population described in the preceding section of this report depends to a large degree on the nature and scope of educational programs provided by the public schools. Hence, educational programs are of primary importance. Considerations which make it possible for these programs to be developed and carried on must depend on this base of direction, form and substance.

Part II of this report describes some of the more desirable characteristics of educational programs which appear to be developing in schools throughout the country. The descriptions will be based on educational objectives derived from studies of current trends regarding needs, values, and aspirations of the population to be educated in Knox County and in the United States.

The descriptions are necessarily general in nature and are intended only to show directions for the future development and improvement of these school systems.

A description of some of the characteristics of current educational programs in the two school systems follows the description of "desired characteristics." This is not all-inclusive, but it includes those characteristics which seem to be of most importance in the current educational programs.

Part II contains conclusions and recommendations derived from a comparison of the current education programs with the desired trends. In the final analysis, improvement of the educational programs will depend on the quality of action taken by those responsible.

Educational programs are formulated and provided primarily to promote learning that is relevant to individual and social needs. The fact that these needs change prompts reformulation of programs periodically.

What was good enough "in the old days" is simply not adequate today. Margaret Mead recently made this observation in another way when saying that no one today could afford to die at the end of a full life with the same education he had acquired in his youth. The recurrent problem is reformulating educational programs in that the present needs be identified and the future ones anticipated. The experience of the past can be employed certainly but it cannot be enduringly effective in a changing set of conditions. Such reformulation obviously requires planning, with attention being given to reliable information and data, imagination, and courage.

The programs of education offered are central to the entire school enterprise. Buildings, transportation, equipment, financing, and organization are all means to providing the best school programs for learning. Changes in programs related to transitions in individual and social needs call for changes in the supporting means. Thus, educational planning must depend heavily upon clarifying school programs that may be the most effective in the furtherance of learning today and tomorrow. Accordingly, attention is now given to what is already appearing in school programs in many places and what is showing in the horizon for tomorrow.

A Look Ahead

Rapid change is a characteristic condition of the world today. Traditionally, education has been given a

role of assisting individuals or society to shape the directions of change, the rate and means of change and the consequences of it.

Hence, education has been a matter of increasing national concern. There is common realization that our security (and possibly our survival) as a nation depends upon how well and how quickly we can develop solutions to the problems we face.

This national concern has been one factor in stimulating a drive toward better quality and efficiency in education. Local and national commissions have been appointed to assist educators in improving educational programs. Legislative acts such as the National Defense Education Act have been passed in Congress, and legislation for Federal aid to schools has become an important issue in the current session of Congress.

Those people responsible for the educational programs are reviewing their notions about what can be expected of the schools and the interdependence of all aspects of community welfare and the educational process. The objectives of education are being spelled out in terms of the quality of performance expected of graduates. The curricular content is exploding into a greater quantity of information than can be absorbed by any one individual, and the emphasis is on quality and interrelationship of the fields.

The schools are being organized in terms of identified needs of students rather than grade levels based on the amount of time spent in school. The teacher is becoming more of a specialist in certain subject matter fields and is rapidly becoming better educated. Salaries are increasing to the point of attracting people to the profession. Teaching roles are changing with specialization, and reorganization of role is a major emphasis.

Technology in the classroom is increasing rapidly in quantity and quality to aid the teacher in her job. Her time will be increasingly spent in extended programs during the afternoon and evening and during the summer months.

The growth and development in the quality of education will be consistent with educational research and experimentation. Dollars will be spent more wisely for education, and research will continue to help develop better quality students for each dollar spent.

John W. Garderner, president of the Carnegie Corporation says in "National Goals in Education":

> "This essay has emphasized repeatedly the need for reappraisal of existing practices and for innovation, but new problems and new solutions are not the nub of our difficulty. The problem is to get action. It has been fashionable to blame educators for every shortcoming of our schools, but educators cannot maintain standards of excellence in a community that cares more about a marching band and winning basketball team than it does about teachers' salaries. American education can be as good as the American people want it to be, and no better."[1]

"Action" is taking place all over the country. Many new and better trends in educational programs have developed and are in the process of development. These trends will result in improvements only if they are directed toward achieving clearly defined educational goals. Hence in describing desirable trends in educational programs more fully it is necessary to look first at what such programs should accomplish.

Educational objectives

Education has been ascribed the role of improving the individual for his own sake and that of society. The proper performance of this role, recognizing individual differences, depends upon each person knowing himself, what he believes, what he proposes to do with himself and with other people, upon each person being able to assess his strengths and limitations, feeling that he has worth and feeling a responsibility for his own learning and growth.

Another role of the schools is that of transmitting the cultural heritage of one generation to another. This means transmission of the know-how, the know-why, and the

know-what that society earlier has accumulated as people sought to unravel their problems and find satisfactory ways of living. But today difficulty is encountered because of the vast accumulation of the past, and a difficult question arises: What is to be transmitted? What is most important? Choices have to be made and education has been given another role--that of assisting people or society to change from the past by shaping the direction of change, the rate and means of change and the consequences of it.

Since education has specified roles to perform, clarity is required in what it is to achieve. Without clearly defined purposes or objectives, education can have little direction and without them any rational appraisal of its effectiveness is impossible. Without clear objectives, articulated programs and practices can hardly be intelligently devised.

Some purposes are proposed here. They are based on the longstanding roles ascribed to education, the transitions in culture and society, and the problems these transitions pose, and upon some of the knowledge that has been gathered about people and their functioning as individuals and as groups.

Education should assist each student to develop the intellectual understanding and knowledge necessary to solve problems and make decisions that will be required in his personal and professional life as a citizen in a democracy.

In order to accomplish this broad objective, the student must be helped through the curriculum and by the teacher to think critically; to marshall and organize pertinent data; to draw hypotheses, inferences, analogies and conclusions; to initiate and evaluate courses of action. He must be helped to construct and apply defensible personal and social goals and to achieve and maintain satisfactory relationships with other people. Each student must be helped to acquire knowledge and understanding of the world in which he lives including the values, appreciations, and dedications of others. The processes by which he develops his learning skills should assist him in developing the ability to continue learning independently both while in school and throughout life.

In essence, the objectives to be achieved describe the responsibilities of the teacher and provide a direction for the development of curricular content. The more important trends in education directed toward the achievement of the objectives stated above, illustrate some characteristics of a desirable educational program and what schools will probably look like in the future. A description of some of these trends constitute the remainder of this section.

Curricular Content and Its Organization

The learning of students in school depends not only on what is taught, but also on how and why the content is presented. The question "why" is answered in the objectives of the educational program. The "how" depends on the way the curriculum is organized and methods and techniques of teaching.

Curricular Content

It is likely that curricular content will be defined to include more than just the subject areas and facts to be taught. Content will also include the teaching of "processes" as well as facts. For example, the objective of critical thinking cannot be achieved unless students are provided the opportunity to learn to solve problems rationally and learn how to make intelligent decisions. An emphasis will be placed on questioning those things which need critical appraisal, rather than on accepting every fact presented. In order to accomplish this, teachers will teach how to solve problems and make judgements by providing experiences which will require that critical thinking be done by the student. The process content will be built into the teaching of the facts. Courses will not be called critical thinking, or problem solving, but these will be a part of every course.

The best example of this is in the content developed by the American Institute of Biological Sciences for high school biology. The biology is combined with a process of helping develop problem solving techniques and competencies. The content itself cannot be taught effectively without teaching problem solving.

Another form of such content will be what could be called group behavior. Students will be taught how to work effectively with each other, the principles of group action, how to make group decisions and take group action. This is already a part of many social studies courses. Again, the students learn by doing, not simply by being told. Laboratories for teaching this content are being established in many schools throughout the country.

These two essential processes, directed toward development of effective individual and group behavior, will be taught more in the future. They will become content but will be taught by student participation in activities directed toward developing knowledge of subjects such as history, physics, chemistry, and English. They have little meaning in and of themselves. To solve problems, there must be problems to solve. To think critically something which needs critical appraisal must be presented.

Social Studies: Greater emphasis will be placed on the social studies. Although physical and biological science, mathematics, and foreign languages have been emphasized most in recent months, an even greater emphasis will be placed on understanding other people and their aspirations, dedications, and values. The development of technology is important, but even more important is the ability of the people to live together peacefully. Educators have realized this fact, and the trend is toward the development of social studies into a sequential series of creative and challenging activities, with emphasis placed on the implications of interpersonal relations as they apply to countries, cultures, and societies.

The content of social studies will be directed also toward helping the student develop a defensible set of personal and social goals. Anthropology, sociology, geography, history, political science, and economics will all add to the social studies a base for making value judgments and the setting of goals. The content in social studies will be organized differently than it is now, and fewer courses are probable rather than more. Emphasis will be placed on the quality of offerings, not on the quantity of courses. The various subject matter areas will probably

be integrated to provide opportunity for developing perspective rather than knowledge alone in areas which appear to most students to be unrelated to each other.

Science and Mathematics: Science and math are already developing so rapidly that the nature of the content in the next few years is difficult to predict. However, trends can be stated in these areas with some certainty. Some first and second graders are already learning division in today's schools. Calculus, analytical geometry, and whole new areas of mathematics have been introduced into many secondary schools.

There will be an increased emphasis on laboratory work for problem solving in mathematics. Laboratories in schience will be found in the elementary school which will compare with the best high school laboratories today. Also, a greater emphasis will be placed on research and independent study.

The content in these subjects is so vast in quantity that the decision on what is to be taught will become even more difficult than it is today. Some of the basic laws around which much of the content has been formed are no longer valid. Mathematics will be taught as a basic tool for examining concepts in science and in other subject areas. Even now, with the newer textbooks used in high schools, the terms and processes are in language that appear foreign to the engineering college graduate of only five years ago.

Foreign Languages: Foreign languages will likely increase in emphasis as a part of a twelve year curriculum. Two or three years of foreign language as now taught are not enough to provide skills in communication in a second language. The teaching of conversational modern languages will begin early in the elementary grades and conversational fluency will be attained by the time the student reaches high school. Language laboratories will be almost standard equipment in new schools.

Latin will slowly fade from the curriculum spectrum. In a few years it will be almost non-existent except in a few schools where tradition or a special need gives reason for retaining it.

Language will be taught in a broader context of meaning and as a means for understanding the thoughts, dedications, and aspirations of other people. If the proposed communication satilites now planned by the National Aeronautics and Space Administration are successful, direct communication by television with people all over the world will be a reality. This could have a profound influence on foreign language instruction.

Arts: Communication skills will not be limited to language fluency. Drama, music, dance, painting, and other arts will be emphasized as international means of communication. Identifying and developing special talents in these areas will become an important aspect of the educational program. Bands will still be popular. More students will have the opportunity to participate in them, and school orchestras and choruses will probably increase in the percentage of participating students and in quality. Emphasis will be placed on the development of special talents. As in athletics, the emphasis will be on the development of the individual and not on the values of public exhibition of performance.

Physical Fitness: Physical fitness will be a major goal of the athletic and physical education program. Activities to develop the student physically will be combined with the teaching of proper nutrition, personal health, and first-aid. Athletics will continue to be a constructive part of the program, but will probably have more relation to developing physical fitness than to providing entertainment. Although athletics will continue to draw large crowds at exhibitions, the spectator is becoming more interested in professional sports that can be seen over television.

Teams, field-trips, and camping will increase in importance. The school building will remain the location for most formal learning experiences, but the classroom will expand to include all available resources in the community.

Trade and Vocational Education: The greatest change in content will probably take place in the vocational subjects. Students who plan to terminate their education

after high school will be provided the opportunities for developing technical skills in a variety of areas. Automation in industry, data processing, electronics, and machine maintenance and repair will increase in the vocational content. Business courses such as business machines, accounting, and marketing will be emphasized. Nearly all students will be able to use the typewriter well by the time they are in high school.

Home economics will emphasize purchasing, budgeting, clothes designing and sewing, interior decorating, and child care. Emphasis will be placed too on organization of civic groups, child-group leadership, and family entertainment.

Agriculture as a course offering will be restricted to rural communities. Emphasis will be placed on mechanization and practical skills for administering large farms and for marketing. Agriculture courses will be related directly to courses in botany, biology, and mechanics.

Trade and vocational subjects will continue to expand into more offerings for adults. The local schools will be used for training adults in a skill or retraining them for changing skills. Recently passed Federal legislation will create a great emphasis on this in metropolitan areas. The secondary school facilities are a natural location for such training.

An increasing emphasis on functionally illiterate adults to read and write above the sixth grade level will be combined with the adult education courses. The basic skills are necessary for developing a salable skill in the trades or other vocations.

English: English as a subject has not been emphasized in the descriptions of content because it deserves special mention. Its extreme importance is not subject to question. The trend seems to be toward an emphasis on reading, writing, spelling, and literature as a part of all subjects. Mechanics of expression will be emphasized in the elementary grades. For example, the high school students will be spending more time in creative writing, objective reporting, and literature in English classes, than in learning the parts of speech.

The subject of English has outgrown its restriction to content taught in and of itself. It will be included as a part of all subjects in the high school, and as a course with related substance, as the skills in reading, writing, and spelling are taught in the elementary schools.

In the high schools, social studies will be integrated with literature as a means of understanding people and how to express thoughts effectively. Creative writing will be emphasized for all students by encouraging the composition of original poetry, writing a defense for a point of view, or composing a story or novel. Some students in schools throughout the country are preparing their own text books in English classes. This kind of experience will be found in an increasing number of schools.

The emphasis in all content areas will be on quality. More will be expected of students in terms of the quality of learning commensurate with individual ability. In some cases, the swing back to 3 R's has caused teachers to increase quantity of subject matter to be learned. Homework, for example, has been heaped on the gifted student in great amounts. This is not good teaching. Quality of what is learned is much more important than quantity.

Organization for Effective Teaching

The curriculum content of the future will be more completely organized in terms of a twelve-year program rather than as separate elementary, junior high, and high school programs. The organization will be much more flexible, subject to the needs and abilities of students rather than completely organized as distinct bodies of subject matter content. The organization will fit the child and his needs, not just the subject matter to be taught nor the number of years previously spent in school.

Grouping

Students will still be placed in groups as they are now, but the criteria for grouping will change. Emphasis will be placed on identifying the abilities, achievement, and needs of the student, and classifying him as a part of a group with whom he can learn most effectively. Years spent in school will have little to do with individual grouping. Grade level will disappear for all practical purposes.

In the elementary schools grouping will be much the same as it is now for the first year. Pupils will have a teacher to whom they can relate and a classroom they can call "my room". First graders will be grouped heterogeneously for the first few weeks of school. Smaller grouping will occur within a class as it does now.

The one exception in procedure may be the grouping of teachers into a team to make better use of their special abilities. All first grade classes may receive specialized instruction from teachers in addition to their "own teacher." Most of the activities will be under one teacher, but others will help with special problems or teach specialized areas.

In the secondary and intermediate grades students will spend a part of their time in groups of fifteen or fewer students, part of their time in groups of 30 or more students, and some of the school week in large groups of 150 or more. Also a great deal of their time will be spent in individual study and research.

A study of over 100 secondary schools in the United States has revealed trends which have been incorporated in a report by the Commission on the Experimental Study of the Utilization of the Staff in the Secondary School. The Commission was appointed by the National Association of Secondary School Principals. Its report has been summarized and describes organization for the future.[2]

> Often instruction in the schools of the future will be provided in classes with fifteen or fewer pupils, especially designed for small-group discussion. In these classes, teachers will analyze students' reactions to course content and will assess students' knowledge. They will observe the ability of students to handle data and to solve problems. They will study how students influence and help one another. Teachers will guide and stimulate student thinking; direct discussions along fruitfulness; advise and consult in such a way as to give depth to learning.
>
> Independent study will be emphasized. Increasingly, the schools of the future need to serve the individual interest and abilities of students. To do

this will require many types of student activities: reading, observing, listening, writing, using automated learning devices, and doing a variety of things under supervision in different kinds of laboratories. These laboratories will be available, not only in the sciences, but in mathematics, social studies, English, language arts, languages other than English, the fine arts, practical arts, and health, physical education, recreation. Workrooms will be equipped with the tools of the trade in the various subject areas.

Study materials for reading, viewing, and listening, so necessary in all parts of the curriculum, will be found in the schools' learning resources centers. School libraries will provide many reference books and other materials of general interest. Additional learning materials for viewing and listening will be available in special rooms and in the laboratories. Individual booths, available on assignment, will offer students opportunity for concentrated thinking, studying, and writing.

Some classes will be large. Tomorrow's schools will use classes of 100 or 150 students or more whenever the desired educational purposes can be achieved best in large groups. The teachers assigned will have experience and skill in handling large groups.

Usually large groups will be taught by a team or group of teachers. Under this arrangement, two or more teachers with assistants plan, instruct, and evaluate cooperatively two or more class groups in order to take advantage of special competencies of the teachers.

Large-class instruction offers other advantages. For example, it makes possible the economical use of technological equipment; it permits, for both teachers and outside specialists, better use of time; large classes help prepare students for large college classes and for many large-group meetings of adult life.

Schedules will be more flexible. Tomorrow's schools will emphasize flexibility of school schedules. Less attention will be given to the school bell, which today breaks the school day into six or seven equal periods of time. The schools of the future will schedule students in class groups an average of only eighteen hours a week. The typical tenth grader may spend about twelve of these eighteen hours in large-group instruction, six in small-group discussion. He will spend twelve hours in independent study.

Students who do not have out-of-school jobs or heavy activity schedules often will spend as much as twenty or twenty-four hours weekly in independent study (including in-school and out-of-school time) instead of today's average of about two hours. The number of hours of independent study and the time spent in large and small classes will vary with the needs and capacities of individual students. Further experience with such a program will help classroom teachers and counselors know better how to make these time and place decisions regarding what is best for different students.

Faculty members also will find their day governed by the needs of the students rather than by a fixed time schedule. Individual teachers will be scheduled to devote from ten to twenty hours per week on class instruction, the number of hours depending on their talents and assignments. The average teacher will be scheduled with groups of students no more than fifteen hours per week. The hours thus gained will be used by teachers for professional tasks and for conferences with individual students. Many of these individual conferences will be scheduled as a result of the suggestions made by instruction assistants and counselors.

Today's schedules lock both student and teacher activities into a rigid framework and keep them there for a semester or a year. Tomorrow's schedules can be changed as needs dictate. This flexibility will be possible because students will be scheduled in groups for fewer hours per week. Electronic and mechanical devices will facilitate the making and revising of schedules.

The Teaching Role

The role of the classroom teacher in the school will differ from what it is today because of the increasing emphasis on individualized instruction. Trends in grouping and scheduling will be directed toward more effective utilization of the competencies of the professional staff.

Specialization: In most of the elementary schools today one teacher has the responsibility of teaching all major subjects to one group of about 30 students. The classrooms are designed so that all major activities can take place in one classroom under one teacher for the entire school year. This arrangement has been called the self-contained classroom. Each elementary teacher stays with the group of approximately 30 students all day, and provides learning experiences in all areas with few exceptions such as instrumental music and physical education. Hence, the current teaching role of the elementary teacher might be described as that of a generalist. A general knowledge of all subjects is required.

Actually, few elementary teachers are competent enough to handle all subject areas equally well. Usually there is one area in which the teacher is most interested and in which she has the greatest knowledge and competence in teaching. The trend is toward specialization of the role of the elementary teacher. The elementary teachers will work together to plan and teach the various content areas of the curriculum. One teacher may teach arithmetic to several class groups. While she does this, another teacher will be teaching corresponding classes in social studies. Hence, the elementary teacher will relinquish part of her current role in regard to teaching curricular content for the role of a "specialist" in certain subject matter areas.

The increased emphasis on the individual student and his peculiar and unique needs will require a different role in terms of teaching methods. Orientation or introduction of a unit of study will likely take place in a large class group. Motivation of student interest will be a primary purpose for such classes and also the teacher will attempt to give perspective to a topic under study. One particular class group of 30 or more will then proceed from the orientation to more specific attention to an aspect or phase of the unit

to be studied that is consistent with their abilities and prior achievement. Smaller groups will emerge from the class of 30 who will vary in depth and scope of their study. For the extremes in ability and achievement, the unusually talented and the slow learner, individual instruction and individually prepared syllabi will be necessary.

Team Teaching: A teacher will not have sole responsibility for a small group of students under her direction. Her responsibility will be shared with a number of teachers who work with her in planning the curriculum and the learning activities for a large group. Each teacher will work with the group in terms of her special talents and abilities. A team of teachers will teach each student. Thus, the teacher's role will change from that of an independent expeditor of learning to that of a part of a team who has the responsibility as a professional group to provide the best quality of learning opportunities for each student.

This approach has been called "team teaching". Unfortunately the term has been interpreted to mean many things ranging from traditional departmentalization to the establishment of ways for teachers to work effectively together in utilizing their individual talents to meet the diverse needs of a large group of students.

"Team teaching", in its most desirable sense, is based on "team planning". More of the teacher's time will be taken in planning with other teachers than is now the case.

The roles described will be present in both high schools and elementary schools. The way these roles are organized and the rate at which they develop depends on the professional competencies of the individual school faculty, the quality of leadership profided by the administrators, and the conditions which exist in each local school.

Guidance to Identify and Meet Student Needs: There is a trend toward providing professional specialists in the schools to serve as a resource for teachers in identifying the needs of students and providing information necessary for devising a curriculum suited to individual student needs. Most of the guidance specialists are in the high schools. However, there is a trend also to provide a similar service to elementary teachers.

In a final sense, effective guidance for the student is the responsibility and role of the classroom teacher. The guidance specialist (or counselor) primarily serves to help identify student needs and problems, to diagnose these individual needs in terms of the learning process, and to suggest guidance for teaching to meet the student needs. In some cases, direct counseling of students is required by the guidance specialist. Primarily this takes the form of suggesting courses of study or vocations or acquiring a better understanding of the student's problems.

At the elementary school level, a professional person with a similar but different role to perform and with guidance emphases is being found in increasing numbers. This specialist is a school psychologist. He diagnoses and identifies learning difficulties, abnormal behavior or mental disorder, and exceptional needs of students. In a sense he serves more as a resource to the teacher than to the student. He helps the teacher to identify symptoms of individual learning difficulties in much the same way as a physician may help the teacher recognize the symptoms of measles or mumps.

Tests are one tool of the guidance worker or psychologist. Thye provide objective evidence for identification of learning needs and abilities. Such information is of extreme value to the teacher. A good teacher can take such information, and with the help of the guidance counselor or psychologist, she can provide individual learning experiences of value to the child.

The Professional Staff

Every profession is marked by the quantity of formal preparation required for a person to practice in that profession. The increase in the quantity of subject matter content to be learned, the changing and increasing importance of the classroom teacher's role and that of the administrator, and the demand and necessity for quality will require more adequate preparation for professional educators in terms of both quantity and quality.

A college degree will become a prerequisite for employment of teachers in most school districts throughout the country. Principals are now required in many school systems

to have an earned master's degree and to have training and experience in their particular educational field. Adequate professional training in the area in which the educator works will become an even more important criterion for employment. A doctor's degree is currently required for many administrative positions in the nation, and more teachers with a doctor's degree are in the classroom.

The trend is properly toward more professional pre-service preparation, and increased emphasis will be placed on in-service education for teachers and administrators.

Technology, curriculum revision, the changing nature of the school community, and the need for most teachers to specialize in certain subject areas requires that professional development of teachers in service increase in quantity and effectiveness. Some school systems require a certain amount of professional development in the form of advanced university credit, travel, or seminar or workshop experiences for teachers to remain employed. Other school systems in the country require such experiences for advancement on the salary scale.

The trend is, of necessity, going to increase. Probably in-service training will be more closely related to salary schedules. Some school systems provide large salary increments for teachers who are working for advanced degrees, or they have established "career scales" to encourage more professional training. A teacher is recognized by a salary increase for continuing her professional development. Such incentives are important.

Continuous professional development on the part of all educators is a necessity if quality education is to be offered. This is especially true for supervisors and administrators who are responsible for providing leadership for the instructional program. In-service education is the key to improved practices, and at least a college degree is an essential requirement for all teachers. Principals should have at least a master's degree. The higher the degree of preparation, the better will be the school system. And it will remain "better" only if continued professional development is considered an integral requirement for employment and salary raises.

Professional Development

School systems are rapidly establishing provisions for continuous professional development of teachers and administrators which go beyond the opportunity for earning advanced college degrees.

Among these experiences are seminars, workshops, work conferences, and laboratory experiences. Basically, they are directed toward improving teacher and administrative practices and implementing these improved practices in the classroom.

The most effective in-service education experiences take place in the local school when entire faculty groups work together to improve the instructional program. At times consultative assistance is secured from universities or other school systems, but the education experiences are for the purpose of improving the school and to implement different and better practices. The faculty works together as a team. Usually experimental projects evolve from such experiences, and evaulation occurs. But most important, professional competence is improved. Hence, the local school becomes the basic action agency for instructional improvement.

Many school systems make short-term courses available on a system-wide basis. At times all or part of the teachers and administrators are required to complete the courses. The courses may be taught over television in a large system, or in various geographical areas of the school system. Usually they concern the newer developments in technology, teaching methods, and subject matter. For example, the newer concepts of mathematics are taught to teachers who have not had the opportunity to keep up with developments in that field. These experiences, when provided in terms of a continuous program of professional development, are most effective in improving the instructional program.

Technology in Aid Teaching

Technical aids in teaching are of little value unless they can be used effectively in the classroom to help students learn more efficiently those things they should learn. Television, teaching machines, film projectors, viewgraphs, slide projectors, data processing equipment, and all of the

other hardware which is now being used in schools throughout the country are only tools for more efficiently using the competencies of professional personnel in providing learning experiences for students. They are neutral. They only give back that which is put into them. Hence, their part in improving the eudcational program is wholly dependent on the way they are used and why they are used. There is no magic in any of them.

Educational Television

Television is increasing in its prominence in the classrooms. Millions of dollars are being spent to provide in-school programs for students and in-service education for teachers. It is relatively new and different as far as in-school education is concerned. The principles which apply to its effective utilization are applicable to all other technical aids to teaching. Hence, educational television will serve as an example of a desirable trend for use of technology.

Like most learning aids, television has been implemented in the schools without its proper role and function being clearly defined. The trend now is to use the medium more effectively in terms of steps in the learning process. Its potential role is still under question, but its existence is a fact, and its potential value is becoming more apparent.

In general, there are several basic principles regarding the use of educational television and the development of educational programs presented via this medium that contribute to the provision of a better quality of educational programs. Among these principles are the following:

1. Programs offered over educational television should provide learning experiences which would be difficult or impossible for the classroom teacher to provide.

   For example, a science demonstration over television provides each student with a front-row seat that he could not get in the classroom. Foreign language is taught by a specialist with a native accent in the language being taught, and the classroom teacher may be learning the language for the first time along with the students.

2. Lessons should be used by the classroom teacher only if they fit properly in the scope and sequence of curricular content being taught to the students.

   Educational television has a tendency to standardize the curriculum unless it is used as an integral part of the classroom experience. It will be beneficial to only some students unless the classroom teacher creatively applies the television lesson to each student's need and abilities.

3. Educational television should be used primarily to motivate students to learn and as one important source of subject matter content. No matter how good the television lesson is or how well it is taught by the studio teacher, it cannot do the total teaching job. Teacher preparation of the class and follow-up learning activities are essential to quality instruction by television.

4. The development of television programs should grow from the development of curriculum. When the courses of study are being prepared, those responsible for preparation should ask and answer the question: What can be better done by television than could be done in the classroom? The program should be developed from the answers to that question.

These same principles apply to the proper utilization of all teaching aids. Proper utilization enables the teacher to expand her competence and to teach more efficiently. The depth and scope of learning experiences can be expanded and a better quality of education can be had for each educational dollar spent.

Other Technological Aids

A good teacher can teach effectively without the use of television, radio, films, viewgraphs, teaching machines, and other aids, but not as efficiently nor with as high a

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quality. Teachers and administrators must learn how to effectively use technology in teaching. Technical inventions can do nothing to improve instruction in and of themselves.

One other point should be emphasized concerning the trend toward greater use of technology in teaching. Use of technical aids will not save money as far as the total school budget is concerned. However, they can make it possible for the money to be used differently and more efficiently, and they can increase the quality of education by serving as a valuable resource for the classroom teacher if they are used for these purposes.

Extended School Programs

The trends discussed have primarily concerned instructional programs for grades 1 through 12. An important trend in education, however, is the extension of school services to encompass the needs of adults, of children under 6 years of age, and of exceptional students.

Junior Colleges

The changing vocational skills brought about by automation, an increasing amount of time for leisure, the expanding need and interest to know more, an increasing number of people who have reached retirement age, and the larger number of working mothers are conditions which demand extended school services. It is likely that this demand will increase.

Other states are now joining states like Mississippi and Florida in establishing junior colleges to serve as an extension of high school for technical training and to serve as a bridge between high school and college. The junior college has proved its value and will continue to expand.

A recent act of Congress which provided funds for teaching new skills to technicians and other industrial workers may lend encouragement to the establishment of terminal vocational courses in high school or junior colleges. Whatever they are called, a student who attends the institution will probably be equipped with a salable skill when he graduates. As has been said earlier in this report, vocational education is experiencing the most rapid change of any phase

of the instructional program. Fourteen years of school will soon be considered, as twelve are now, and as the elementary school once was,necessary for employment. More people are going to spend more time in school.

Kindergartens

Kindergartens as a part of the regular public school programs are going to increase in number within the next fifteen years. The increasing number of working mothers and the resulting need to have some place to leave their pre-school-age children is causing a larger number of private kindergartens to spring up in areas where kindergartens are not provided as a part of the public schools. Although most educators would like to ascribe other causes for the increasing demands for kindergartens, baby-sitting is a part of the cause. However, kindergartens have proved their value over the years in developing the child's readiness for learning and school. Kindergarten develops the child socially, physically, and mentally, and provides a base for formal education. After three or four years in school, there is little difference in children who have been in kindergarten and those who have not, as far as achievement, social development, and physical development are concerned. However, the first three or four years have been easier for the child, and especially in that big step, the first grade.

Special Education

There are exceptional children in our schools today who need exceptional or special education. Some of these children are blind, or crippled; some are emotionally disturbed or mentally retarded; some have speech defects. A number of children are bedridden at home or are hospital-bound because of a temporary but prolonged illness. Providing special educational experiences for these children is a trend which is increasing and is expanding the services of the school.

The local special education programs are usually largely supported by state funds. Their value is unquestionable. They are developing the mentally and physically handicapped into productive citizens. The trend will continue.

Educational Summer Programs

The nine-month school term is already extended in most school districts. Summer school is nothing new; the trend is toward an expanded summer program which encompasses more than remedial academic work or academic credit for an early high school graduation date.

Development of special talents in music, art, sciences, and the demand for vocational, recreation, and adult programs will continuously increase in the next few years, especially in urban areas. Some school districts have expanded their programs into twelve months on a quarter basis, which breaks the regular school year into four quarters instead of two semesters. Overcrowded facilities and the need for more education in less time are some of the reasons for this move. Providing more educational opportunities is the primary reason.

Twelve-months employment for principals and teachers is a necessity for such programs, and this increases the school budget accordingly. Such increases are justified not only because they provide needed education but also because they make it possible to utilize more effectively large expenditures already made for capital outlay. Keeping an expensive school building idle for three months during the year is not a very wise use of capital outlay funds.

In urban areas the summer programs are being developed to include activities for the total neighborhood. The schools are used for teaching technical and vocational skills, developing special talents, offering recreational activities, and increasing competence in the basic skills for adults and youth in the community. Summer programs offer opportunities for decreasing juvenile delinquency by providing something to do that is worthwhile. Illiterate adults learn to read and write, and family-centered activities provide a way to strengthen the family unit that has been weakened by social and economic conditions in the neighborhood.

The school day is also being extended. Because of overcrowded conditions in some urban areas, many high schools now have what is called a zero period. This period begins about one hour before the school day normally starts. Elective subjects are offered. This leaves time during the regular

day for more academic subjects and makes it possible for students to come early and leave early and thus make better use of limited physical space.

The hours after school are being used for recreation, reading, laboratory work, music, art, clubs, and many other activities in neighborhood schools. Three of the primary reasons for extension of the school day are: to use more efficiently limited facilities, to offer educational opportunities for students who need additional time, to offer wholesome and educational programs for some students who would find other activities on the streets that might lead to delinquency and crime.

Teachers and administrators now find their afternoons and evenings filled with a great variety of professional demands. Time for planning together as a faculty, working with children who need special attention, professional meetings, and working with parents is becoming more and more difficult to find. Careful planning for more efficient utilization of staff time is a necessity as the school program expands. The trend nationally is toward a shorter work week for almost everyone except public servants. Teachers, doctors, and other professional people find more demands on their time. Employment of more teachers and revisions in time scheduled for certain activities in the school are necessary. The previously described team approach is one trend to help relieve the pressure on teacher time. Also a flexible school schedule makes better utilization of professional time possible. Increased salaries consistent with added professional responsibilities is a trend that establishes incentive and compensation for increasing demands on professional personnel.

Research and Experimentation

Improvement in educational practice has not come about accidentally. The trends described are those which have been found to be desirable through research. Such research is as increasingly important in today's schools as it is in industry. Departments of educational research are being established in school systems throughout the country as well as in colleges and universities. The money being spent for this purpose is paying dividends in the quality of education and in greater economy.

For example, ten thousand dollars for research to find the best school building sites may prevent an expenditure of half a million dollars for a school building that cannot be adequately used because it was built in the wrong place. New vocational skills needed in a community and courses for providing them can be identified by research. Research helps establish the needs and the basis for judgment and administrative decision.

Of equal or greater importance is research and experimentation which deals with teaching, use of technology, organization, and teaching practices. Experimentation is necessary and should be accompanied by carefully devised and continuous evaluative research. All experimentation in changed programs should initially be on a small scale and expanded only when scientific research proves its value in better accomplishing the educational goals of the school system. The rapidly changing curriculum demands the best in evaluative research and well-designed and controlled experimentation.

Boards of education are beginning to budget a percentage of funds for research. Most of the members of these boards of education realize that money spent for this purpose will insure the taxpayers a better quality of education for each dollar spent. It is poor business practice to do otherwise. Hence, the trend is toward research and experimentation in education. As a result, educational programs should improve more rapidly and on a sound basis in the future.

The Current City and County Educational Programs

Many of the desirable trends described in the preceding pages are presently a part of the educational programs of the Knoxville and Knox County school systems. The extent of these trends provides a basis for assessing the current programs and for determining steps for their further development.

The descriptions of the existing programs do not include all of the aspects of the current educational programs nor are those parts of the programs included treated in great detail. The descriptions are based on three primary sources of information: publications and reports submitted by the central offices and the individual schools, visitations by members of the study team to a representative number of

schools and to the central offices, and interviews with professional and lay citizens in the City and in the County.

Comparison of the two school systems with each other was not a purpose of this study. Such comparisons undoubtedly will be made by readers because similar data on the school systems are presented at the same place in the report. But judgments concerning the relative merits of current programs should be made only by a comparison with desirable programs, not by a comparison of the school systems with each other. Which school system is the better is not the issue. Both have strong and weak points, and both can be improved. Finding the best action for improvement is the real concern.

Educational Objectives

The Knoxville and Knox County schools have prepared good statements of educational objectives. Knox County schools have stated their objectives in terms of the competencies to be developed in students who attend the schools and in terms of how the school system attempts to meet these objectives. These objectives as they were reported to the study team are as follows:

I. To meet minimum requirements as wet up by the state department of education and surpass these requirements in all areas possible.

II. To meet the educational needs of the students through a curriculum developed within the state requirements, and to improve and expand the curriculum framework in as many ways as possible in order to meet the varied interests and abilities of our students.

1. Through careful determination of local needs provisions shall be made for meeting the following educational needs:

(a) Competence in the use of the fundamentals of learning and communication.

(b) Ability to develop and maintain satisfactory relationships with others.

(c) The achievement of understanding, habits, and attitudes conducive to physical and mental health.

(d) Competence in the practice of civic skills.

(e) Competence in the use and management of natural resources.

(f) Understanding and appreciation of our basic American institutions and their significance for the family and the individual.

(g) Vocational competence.

(h) Ability to purchase and use goods and services wisely.

(i) Acquisition of spiritual, moral, and ethical values that will provide sound guides for personal living.

(j) Appreciation of the scientific attitude, and skill in the use of the scientific problem-solving method.

(k) Understanding of world relationships and effective participation in world affairs.

2. Provision shall be made for instruction in the areas of the arts, health, language arts, mathematics, science and conservation, social studies, and vocational education.

3. Course of study materials developed in each of the instructional areas shall be organized with respect to scope and sequence for each grade level.

4. Courses-of-study materials developed by local school systems and submitted for approval shall include the following important elements in instruction: purposes, content, materials, methods and activities, and evaluation.

5. Each school within the system shall develop its instructional program within the framework of the system of which it is a part.

III. To promote home-school relations which bring about a better understanding between teachers and parents.

IV. To secure the best qualified teachers available.

V. To provide opportunities for teacher growth through the county-wide and local school in-service education program.

VI. To encourage teacher participation in professional associations.

VII. To provide adequate physical facilities and materials to carry out the instructional program.

VIII. To keep the public informed concerning the school program and enlist their continued support.

IX. To maintain effective working relations with the Board of Education and the county's fiscal body.

The Knoxville City system has reported the following objectives in a report to the study team.

This statement is one of primary purposes, beliefs, and values for the Knoxville School System. It serves as a basis for thought, discussion, and guiding principles in out school operations. From time to time, it will be necessary to re-examine these basic assumptions in order that they may be adjusted to current needs.

WE BELIEVE:

1. Equal educational opportunities should be provided all children and youth so that they may achieve to the fullest extent of their capabilities.

2. Our schools should be concerned with the personal worth and dignity of each individual and should provide opportunities for the development of attitudes, knowledge, creative ideas, and skills essential to the individual.

3. Youth should be educated in such a way that they may have opportunity to develop social maturity and intellectual qualities to attack intelligently problems that face them, exercise good judgment, take an interest in civic affairs, and understand their responsibility to a strong United States with its leadership role in the world.

4. Our schools should teach love of country, appreciation of national heritage, respect for constituted authority, and world understandings.

5. Our schools must keep pace with the changing world and with social and technological advances, transmit the cultural heritage, teach basic and specialized skills, and constantly revise methods and materials in view of needs and situations.

The Knoxville School System has further specific responsibilities:

1. To provide a sound general education for children and youth, vocational education, and educational opportunities to the adults in the community.

2. To provide a curriculum for individual differences, well-planned, flexible, vital, open to new ideas and practices.

3. To provide a sound mental and physical health program.

4. To motivate students to think carefully, express themselves clearly, and grow in abilities to use the many tools of learning.

5. To provide a school situation in which students may learn to adjust intelligently to the environment, cope with individual problems, insure

future research, make new discoveries, and form opinions.

6. To provide sound educational, vocational, personal, and social guidance and, for many students, adequate vocational training for earning a living.

7. To provide creative experiences in art and music through individual and group activities.

8. To give emphasis to moral and spiritual values by precept, example and experiences - both values being essential to individuals and to preserving our democratic way of life.

9. To develop parent-community relations in the support of the total educational program by use of every appropriate resource and means to advance the cause of sound public education.

10. To recognize the necessity of auxiliary departments within the school system and professional organizations, which seek through multiple services to promote the educational program.

These purposes, beliefs, and values offer guidance, direction, and meaning to a way of life, and an educational system that will help prepare individuals to live more effectively and more abundantly.

Teachers and administrators in the two school systems in Knox County have faced the problem of establishing objectives which can be used as guides for classroom instruction.

There appears to be two limitations in how the objectives were formulated. They were based primarily on what were thought to be student needs instead of objective evidence, and the process of formulation did not involve lay citizens.

In order to develop objectives consistent with the needs of students in the Knoxville area, some means should be established for identifying the educational needs of students, and from the needs develop educational objectives which can serve as a basis for the creation of a consistent

and total system-wide program of instruction. Without such overall objectives, some individual schools may work at cross-purposes with other schools.

There is also some evidence that lay citizens do not fully understand what the schools are trying to achieve. This is even true on the part of some board of education members. Lay citizens should be directly involved in the decisions regarding the direction educational programs should take.

Needs of students know no school district boundaries. The importance of defining practical educational objectives is so great that it seems advisable for the two school systems to work on this together.

Curricular Content and Its Organization

In the final sense, that which is taught in the schools is that which is learned by the student. All students do not learn all things presented through the instructional program, and students vary in their capacity for knowledge and in the speed with shich they acquire it. So, to say that American history is taught in school tells very little about what the student actually learns about American history but for the purpose of this report, it will be assumed that a course title is sufficient to indicate the general content of courses.

Scope and Organization

The Knoxville and Knox County schools offer courses of study to students from grades one through twelve, and some courses are made available in the City for those citizens over eighteen years of age. For the most part, the courses offered are consistent with the prescribed course of study defined by the Tennessee State Board of Education.[3] There are some courses offered above the minimum requirements of the State Department.

The Knox County secondary schools provide courses organized into three "tracks". These tracks are defined as the General Education Curriculum, the Applied Arts Curriculum, and an Academic Curriculum.

The General Education Curriculum is designed for those students who perform below grade level and whose potential for scholastic learning is somewhat below average. Sixteen units earned during the last four years of high school are required for graduation: English, four units including one unit of speech; physical education, one unit; mathematics, one unit; biology, one unit; American history, one unit. Additional units up to the required sixteen units may be taken in elective subjects.

The Applied Arts Curriculum requires eighteen units for graduation. It may be college preparatory, but it is designed primarily for pupils who plan careers in trades, business, and industry. The subjects required for graduation are the same as those required in the General Education Curriculum. The difference in the two tracks lies in the requirement that students in the Applied Arts Track must have one major (three unites in one field) and two minors (two units in each of two other fields of study) and sufficient electives to make eighteen units which are chosen from any field recognized in the State Minimum Standards.

The Academic track is designed for those students who plan to enter college. The basic requirements are the same as those for the Applied Arts track except that one major or one minor shall be in the area of mathematics. Remaining majors and minors shall be chosen from: foreigh language, science, social studies, and fine arts. Electives to complete the required eighteen units may be chosen from any field recognized in the State Minimum Standards.

The high school program for Knox County, embracing the three tracks, puts great importance upon pupil placement. While the underlying purpose is to provide each pupil with a high school program that will help him build on his strengths, it places added responsibility upon all staff personnel. Just how valuable the time spent in high school may be to the pupil is in great measure dependent upon his placement. Therefore, much thought and planning have been given to guidelines for placement.

The placement program has its main emphasis at the ninth-grade level. This emphasis begins with the eighth-grade testing program in the spring. In February high school guidance workers and principals plan with elementary

school principals and eighth-grade teachers a schedule for administering standardized tests to eighth graders. Following the testing, the high school guidance personnel (often principals, too) meet with eighth-grade pupils and their parents who so desire to plan the pupils' ninth grade placement and the courses they will take. Eighth-grade teachers are consulted about the track they feel would benefit each student.

In addition to the testing and counseling services, it has proved helpful to establish a contact from the high school with eighth-graders to facilitate "bridging the gap" between the elementary school and high school.

The following data (not listed in order of importance) are all taken into account by principals and guidance workers in helping each pupil and his parents decide on the appropriate curriculum for the pupil.

1. Eighth-grade teacher recommendation

2. Achievement test data (Advanced Stanford Achievement Test, Complete Battery)

3. Intelligence test data (Two, three, or more scores considered; never just one score from a group test. I. Q. scores, as such, are not given to parents and the pupils; however, an indication such as "Average", "Above Average", or "Below Average" may be helpfully and safely given.)

4. Interest Inventory results (Particularly highest and lowest percentiles analyzed)

5. Scholastic grades

6. Socio-economic background (Parent vocation, best single indicator)

7. Extra-curricular interests and activities

8. Parent preference

9. Pupil preference

10. Available courses and their content in each track

11. Pupil's vocational goals

After all information available has been taken into account and the consistencies are pooled, a pattern usually becomes evident; hence, giving direction for placement. Should this placement not be acceptable to the pupil and his parents, their wishes take precedence. Later, if this placement does not work out well for the pupil, a re-evaluation is made with the persons concerned to see if a more workable arrangement can be made.

Theoretically, pupils may move from one track to another, either way, should such a move appear feasible. Classroom teachers can here render invaluable aid to the guidance worker and principal. A plan for two-way communication among teachers and the guidance worker should be a part of every guidance program to insure that each pupil will be enrolled at all times in the track and courses most suitable and beneficial to him. Human opinion and data from standardized testing are relative in value; many factors can contribute to errors in placement. For this reason, placement must be a continuous process, subject to change. While most decisions about placement involve ninth-grade pupils, the same processes apply to pupils new to Knox County.

The stated purpose of the three track program in the Knox County high schools is to provide for each pupil an educational program that will be most meaningful for him. At the same time, it must be recognized that this can be realized only to the extent that placements are the result of a most careful appraisal of all available information about contributing factors. Helping pupils and their parents make the right decisions about placement, therefore, becomes one of the most vital services included included in the guidance program of the Knox County high schools.

Although the major purpose of the track curriculum is a sound one, there is a question as to the effectiveness of such organization in accomplishing the more specific objectives of the total educational program.

The City schools have a varied organizational pattern for grades seven through twelve. Two schools contain grades seven through twelve, two have grades nine through twelve, two contain grades ten through twelve, five are soley junior high schools and are organized with grades seven through nine, and one has grades seven through ten.

The City high schools do not have a track system; however, students are helped to choose those courses which would best fit their needs for college or for jobs in trade and industry. Austin high school and Fulton high school offer vocational courses which are used as terminal educational opportunities for those students who do not intend to go on to college.

The organization of the junior high schools has apparently taken place as a solution to a space problem rather than in terms of the objectives of the schools. An integrated course of study for all twelve grades is not apparent.

Elementary Schools

The elementary curriculum for grades one through six is similar in the two school systems. The students are grouped into self-contained classrooms. A self-contained class is one in which students take all subjects at a particular grade level under one teacher and remain in one classroom for all regular instruction during a school year.

In the County system in all elementary schools of more than seven teachers, the seventh and eighth grade work is departmentalized. Students report to different teachers for each subject taught. In some elementary schools there are grade combinations in a class because of lack of space or lack of teachers. In some cases the organization limits, rather than enhances, individualized instruction.

Content

The following subjects are typical of the subject content in the elementary schools in the City and County schools:

Typical Elementary Curriculum

1st Grade - Language Arts
Science and Social Studies
Health and Play
Numbers
Art and Music

2nd Grade - Language Arts
Science and Social Studies
Health and Play
Numbers
Art and Music

3rd Grade - Arithmetic
Spelling, Writing, and English
Health
Reading
Science and Social Studies
Art
Music

4th Grade - Arithmetic
Spelling, Writing and English
Health
Reading
Science and Social Studies
Art
Music

5th Grade - Arithmetic
Spelling, Writing, and English
Reading
Social Studies
Health and Play
Science
Art
Music

6th Grade - Arithmetic
English
Reading
Health
Science
Social Studies
Art
Music

The subject matter areas are repeated each year as is evident from the preceding content. The topics studied and the experiences had in each area differ from grade to grade and proceed from introduction of the basic skills to constant use of them.

Basically the schools follow the State recommended course of study as a guide for minimum offerings. In addition to those required by the State as a minimum, some elementary schools provide instruction in Spanish and French for advanced students. Such offerings are not available in all schools in the two systems because of lack of qualified teachers.

The junior high school curriculum varies from school to school. In the County schools, the junior high grades are in the elementary schools or in the high schools. In the high schools. In the City the grade pattern is varied for grades seven through nine.

English, arithmetic, social studies, physical education, music, and art are the basic subjects taught in junior high school. Some schools have woodworking shops, French, Spanish, and homemaking.

At the high school level, the course offerings expand greatly to range from the basic subjects to a specialized vocational program. Again, the specific offerings vary from school to school. Some of the elective courses in high school have been chosen to illustrate how widely the offerings vary from school to school. These are shown in Table XIII.

A detailed analysis of each school and its curriculum is beyond the scope of this study. Several broad generalizations may be made, however:

1. The variety of offerings is adequate in both school systems.

2. The course of study varies from school to school in high school grades, junior high grades, and elementary grades. Students in the school systems do not have equal opportunity to take all courses offered throughout either of the two school systems.

Table XIII Selected Elective Courses (Above 9th Grade)

	Knoxville Schools								Knox County Schools										
Schools Subjects	1	2	3	4	5	6	7	T	1	2	3	4	5	6	7	8	9	10	T
French	X	X	X	X	X	X	X	7		X		X			X	X	X	X	6
Spanish		X		X	X	X	X	5	X			X	X	X	X	X	X	X	9
Latin		X	X		X	X	X	5		X	X	X	X	X	X	X	X	X	9
Bible		X	X			X	X	4				X				X			2
Problems of Democracy													X		X			X	3
Psychology										X	X		X			X			4
Sociology		X	X					2			X	X			X		X	X	5
Geography		X	X		X			3	X		X	X			X	X	X	X	7
Trigonometry or Advanced Math		X			X	X		1 2	X	X X		X			X	X		X	2 5

3. The number of electives in the high schools provides ample opportunity for students to study in many areas.

Students Organizations

Experiences other than regular elective courses for credit are also available in the schools in the form of clubs and student government organizations. There seem to be more of these "extra-curricular" organizations in the City schools than there are in the County schools. This is probably because most of the students in the County schools are transported by bus and cannot remain after school for club activities and athletics.

The general stated purpose of such activities is to provide opportunities suited to student interests and abilities. Some are honorary organizations whose membership is limited to those students making certain achievements.

Some of the many student organizations are as follows:

Anchor Club
Art Club
Bible Club
Debating Club
Language Club
Spanish Club
Key Club
Needle Work Club
Model Airplane Club
Girl's Sports Club
Latin Club
Lettermen Club
Photography Club
Sketching Club
Sewing Club
Personality Club
Nature Study Club
Quill and Scroll Honorary Club
Radio Club
Stereo Club
Songfest Club
Student Council
Thespians
Trade and Industrial Club
Y-Teens
Stamp and Coin Blub
Things and Places Club
Thrift Club
Woodsawing Club
Projectionists Club
Reading Club
Chess Club
Landscape Club
Space and Junior Rockets Club

Some schools have all of those listed above and more. There are probably too many to make the best use of student and teacher time.

Special Education

One of the commendable aspects of both school systems is the opportunities made available for handicapped children. Both school systems have offerings in "special education" for emotionally disturbed, crippled, partially-sighted, hard of hearing, speech handicapped, and mentally retarded children. The Petigo school in the County and the special classes in some of the schools in the City and the County are making it possible for these children to develop intellectually and socially. Instruction is also provided for those in hospitals and homes who have prolonged illnesses.

There are approximately 729 students in special education classes in the City and approximately 1,478 in the County. The special education movement is relatively new in the two school systems. It has state support from the State Department of Education and institutions such as the University of Tennessee offer courses for training teachers to work in special education classes. Instruction for these children is on an individual basis except for some speech and hearing classes. Classes are necessarily small and are limited to fifteen pupils per teacher for the severely handicapped. Every effort is made to return these children to regular classes when possible.

Student Achievement

A look at standardized tests scores gives only a rough indication of achievement in subject content when the scores are interpreted as a measure of a school system. At best, they are only an indicator, not to be taken as a final and unequivocal measure of achievement. There are great limitations to all standardized tests. For example, they do not consider the social and cultural background of the student. Many are biased because of this. They cannot adjust scores in relationship to ability, and even I. Q. scores obtained at various times are subject to variation. Neither is there evidence that achievement tests indicate probable success of students in all cases.

Hence, the achievement scores are presented only as a rough measure of how well the students are learning those things the tests measure. Comparisons should be avoided by all means between the scores of the two school systems. There are no valid and objective grounds for comparison of this type.

The scores were submitted by the central offices and are in terms of median grade-level scores. For example, a score of 6.2 means achievement at the sixth grade and two-months level. An average student should be scoring at level 6.2 in the second month of the sixth grade. A median score means also that fifty percent of the students tested made below that score and fifty percent made above.

Knox County

In Knox County high schools, by both local and national norms, the principal deficiency in achievement is in social studies, with an appreciable drop between tenth and twelfth grades. In science and mathematics, percentile scores are at the median or above for the population on which the tests were standardized.

Seven high schools are above the fiftieth percentile in terms of battery medians at the tenth grade. For the twelfth grade, as far as the battery median is concerned, four schools are above the fiftieth percentile.

At the elementary level in the County schools from grades one through three, the pupils scored at the median or above in all areas tested (Stanford Achievement Batteries). The fourth grade is below the national norm in all subject areas. In the fifth grade, pupils score below the national median in all areas except word meaning, which is at the median.

In grades six, seven, and eight, students scored below the median in all areas tested. By inspection, it is evident that at the seventh grade, with a few exceptions, greatest underachievement occurs.

Intelligent quotients were furnished along with the standardized test data from the County schools. By inspection, it is rather obvious that there is a high degree of relationship between achievement and intellectual ability. Schools which have students with high intelligence quotients show achievement scores above the national norms. On the other hand, in schools generally where intellectual ability is below average, achievement is below national norms.

Knoxville

In May of 1957, "The Essential High School Content Battery" of tests was given to the high school seniors in eash high school. Out of a total of seven high schools, four were below the national norm in terms of median battery scores. Five schools were below the norm in mathematics, four were below the national norm in English. Two of the schools were consistently above the national norm. These scores are summarized in Table XIV and are the latest scores available on seniors.

Table XIV Scores on Essential High School Content Battery of Tests Given to Seniors in May, 1957.

Subject \ High School	1	2	3	4	5	6	7	National Norms
Mathematics	118	120	114	109	105	94	101	116
Science	128	125	115	118	110	106	104	118
Social Studies	126	122	117	121	110	105	113	124
English	127	123	119	124	114	99	107	120
Median for School	127	122	116	120	110	102	106	119
Number of Students Taking Test	102	148	298	85	108	126	25	892 Total

Achievement test results for grades six and three during the 1961-62 school year were available from the City also. The Stanford Achievement Battery was used in the sixth grade and the Gray-Votaw-Rogers test was given at grade three. The data were separated for white and negro students. In the sixth grade, students in the white schools ranked at least seventh grade or above except in areas of arithmetic computations and social studies. Median scores ranged from 6.5 to 7.7 with the lowest in arithmetic computations and highest in spelling. The average I. Q. was 105 for the sixth grade white students.

Negro students in the sixth grade ranked one grade or more below the norm in all areas except spelling. The lowest scores were recorded in paragraph meanings and arithmetic reasoning. The battern median (all subject areas) was reported as 6.2 or near the national norm. The average I. Q. for the negro students tested was 90.

In the City the results of test given in the first three elementary grades indicated achievement at or above the national norm. This begins to drop in the fourth grade where scores remain near the norm throughout the grades tested.

Tests in General

Social and cultural backgrounds have a great influence upon achievement scores and I. Q. scores. In the South, negro students and white students from areas low on the socio-economic scale generally score lower on standardized tests. Tests free of "cultural bias" have not been developed, although some good ones are being devised and standardized which may reduce such bias.

From the scores of tests made available by the two school systems, it is apparent that achievement could be improved. Those areas dealing with social studies and reasoning are weakest. Also, something happens at grades four and seven. It seems logical to assume that at grade four the student is expected to have a certain degree of mastery of the basic skills and to become more independent. Also at grade seven, high school and departmentalization could be one of the major disrupting factors.

Although students tested in both school systems had median scores near the national norms, it should be pointed out that a median score means fifty percent of the students made scores below the level and fifty percent scored above that level.

The need for continuously trying to raise the level of achievement in terms of student ability in any school system is a national concern. The Knoxville and Knox County schools should not be satisfied with the current achievelevel reached by their students.

The Professional Staffs

The current professional staffs are described in terms of amounts of professional preparation, years of experience, age, stability in the system, salaries earned, and in-service training. The professional staffs are the key to quality. There never has been a staff that was too well-qualified or too competent, because there is a constant flow of new knowledge which can make teaching more productive.

The City Professional Staff

The City schools are staffed by well educated and experienced professional personnel. Only three per cent have no college degree and the lowest average number of years experience for any one category of professional positions is thirteen years.

The largest number of professional personnel are between the ages of 45 and 55. Out of a total of 878 professional employees only 54 are below 25 years of age.

Approximately two-thirds of the supervisors and directors have a master's degree or above and three-fourths of the principals have at least a master's degree. The only position held by non-degree personnel is that of classroom teachers and only 24 do not have a bachelor's degree or the equivalent. In terms of professional preparation, years of experience, and age, the City school system has a qualified professional staff.

The Knox County Staff

The Knox County schools are staffed by 1,189 classroom teachers, 78 principals, and 19 administrative and supervisory personnel who work in the central office.

Over 63 per cent of the classroom teachers have earned a bachelor's degree and approximately 12 per cent hold a master's degree. Almost one-fourth, 24.6 per cent of the classroom teachers have no college degree.

Approximately 18 per cent of the principals in the County have no college degree and one principal has never attended college. Master's degrees have been earned by

Table XV Professional Preparation and Experience of City Personnel, 1961-1962

Position	No College Degree	%	Bachelors Degree	%	Masters Degree and Above	%	Total	Mean Years Experience
Principals			10	24.4	31	75.6	41	30.7
Assistant Principals					3	100.0	3	13.0
Counselors			11	47.8	12	52.2	23	17.3
Librarians			6					
Teachers	24	3.1	580	73.7	183	23.2	787	16.6
Supervisors			2	33.3	4	66.7	6	31.8
Directors			1	33.3	2	66.7	3	27.7
Superintendent					1	100.0	1	36.0
Total	24	2.7	*610	69.5	244	27.8	878	100.0

* Vocational teachers (non-degree) included in this figure are rated on a Bachelor's Degree level by the State Department of Education

Table XVI Age Levels of City Professional Staff

Position	Below 25 yrs No.	%	25-35 No.	%	25-45 No.	%	45-55 No.	%	55-65 No.	%	65-Above No.	%
Principals			2	4.9	3	7.3	12	29.3	19	46.3	5	12.2
Assistant Principals			1	33.3	1	33.3			1	33.4		
Counselors			7	30.4	5	21.8	4	17.4	7	30.4		
Librarians			3	21.4			10	71.4	1	7.2		
Teachers	54	6.9	200	25.4	156	19.8	207	26.3	152	19.2	18	2.3
Supervisors							2	33.3	3	50.0	1	16.7
Directors					1	33.3	2	66.7				
Superintendent									1	100.0		
Total	54	6.2	213	24.3	166	18.9	237	27.0	184	21.0	24	2.7

37 percent of the principals, and 5 percent have earned 45 quarter hours college credit or more beyond the master's degree. One of the principals has an earned doctor's degree.

All of the professional personnel in the central office have a bachelor's degree and thirteen of the nineteen members of the staff have earned a master's degree or above. All members of the central office staff in the County are well experienced with six years the least number of years. Most of the central office staff have over fifteen years of professional experience.

Over half of the classroom teachers in the County are below 46 years of age and eleven percent are below 25 years of age. Approximately half of the classroom teachers have ten years experience or less.

Most of the principals are over 35 years of age. Only 14 of the 78 principals are under 35 years of age. Two principals are under 25 years of age. The mean years of experience of this group is 23.5.

The professional preparation of the Knox County staff as a whole is far from desirable. The high percentage of teachers without adequate preparation, the number of principals without a degree, and the relatively small percentage working toward degrees are the greatest weaknesses in the Knox County schools. However, a degree does not necessarily mean a good teacher, and there are many excellent teachers without degrees. Tenure of teachers is not something to be bestowed as a gift, it carries a responsibility with it. Those teachers in Knox County who are content to remain in positions without furthering their own education should recognize this fact. Regulations requiring additional study and the acquisition of a degree in a specified period of time would be in order. The Knox County Board of education has passed a regulation requiring a degree for employment of new teachers. This is a step in the right direction.

Professional Staff Turnover

Since 1956 eight new principals have been employed in the City schools and approximately 120 new classroom teachers have been required each year. This is approximately fifteen percent turnover in classroom teachers.

Table XVII Professional Preparation and Experience of County Personnel, 1961-1962

Position	No College Degree	%	Bachelors Degree	%	Masters Degree and Above	%	Total	Mean Years Experience
Principals	14	18.0	30	38.5	34	43.6	78	23.5
Teachers	290	24.4	755	63.5	144	12.1	1,189	11.5
Superintendent					1	100.0	1	
Administrative Assistant					1	100.0	1	
Supervisors			3	25.0	9	75.0	12	
Directors					2	100.0	2	26.0
Business Manager			1	100.0			1	
Attendance Teachers			2	100.0			2	
Total	304	23.6	791	61.5	191	14.9	1,286	100.0

Table XVIII Age Level of County Professional Staff, 1961-1962

Position	Below 25 yrs. No.	%	25-35 No.	%	36-45 No.	%	46-55 No.	%	55-65 No.	%	66- Above No.	%
Principals	2	2.6	12	15.4	16	20.5	21	26.9	26	33.3	1	1.3
Teachers	132	11.1	263	22.1	226	19.0	373	31.4	179	15.1	16	1.3
Other Supervisory and Administrative Personnel			3		3		6		7		0	
Total	134	10.4	278	21.6	245	19.1	400	31.1	212	16.5	17	1.3

About eighteen percent of the professional personnel in the City schools have worked on advanced degrees during the last school year and approximately fifteen percent of the County professional staff have worked toward professional advancement.

During the 1961-62 school year there were 61 additions to the professional staff in the County and 139 replacements. These numbers are approximately the same as the average number of additions and replacements required in the County over the past five years. The total instructional staff in the County has almost doubled in number since 1951 because of the increase in enrollment. The pupil-teacher ratio has dropped from 1 to 29.6 in 1950-51 to 1 to 25.0 in 1961-62.

Supervisory and administrative staff positions at the central office in the County system have also doubled since 1951. In 1950-51 there were nine full-time supervisory and administrative positions in the central office. In 1961-62 there were nineteen.

Comparisons

The median percent of classroom teachers with various amounts of preparation in 1960-61 in school districts in the United States with average daily attendance of 25,000 to 37,499 is compared with Knoxville and Knox County in the following table.[4]

Table XIX Percent of Classroom Teachers With Various Amounts of Preparation

	No Degree	Bachelor's Degree	Master's Degree or Above
Knox County	24.6	63.5	12.1
Knoxville	3.1	73.7	23.2
U. S. Median	3.5	60.2	31.9

The turnover rate of teachers in Knoxville and Knox County is approximately fifteen percent and ten percent respectively. The rate for school districts of comparable size in the United States is approximately ten percent.[4]

Salary Provisions

The minimum and maximum salaries of classroom teachers in 24 selected urban school districts including Knoxville and Knox County are ranked on charts on the next two pages in terms of maximum salaries.[4] The size of school population in all these districts is similar to Knoxville and Knox County.

It should also be noted that the minimum salaries are even lower when compared with other cities than are maximum salaries. The two school systems must compete with many of these cities for qualified teachers. To say that the salaries are not adequate in either system is an understatement.

For a bachelor's degree, Knoxville ranks fourteenth out of the 24 and Knox County ranks twentieth. The maximum salaries for the master's degree reveals Knoxville's rank at fourteenth out of twenty-four, and Knox County is next to the bottom of the school districts listed.

Even though an attempt was made to select the school districts that were located in the South and were approximately the same size as the two districts in Knox County, the size of the school district has little to do with the salary paid.

"Teachers in the largest urban school systems at one time enjoyed considerable salary advantage over the teachers in smaller districts. This is no longer true. Much of the reduction in differential came before 1950-51, but it has continued through the past decade. Similarly the big-city advantage in maximum salaries is also disappearing...."[5]

The 1961 salary schedules for the two school systems in Knox County are contained in the appendix of this report. A study of the salary picture reveals the following facts:

Figure V

Salary Provisions for Classroom Teachers With the Bachelor's Degree in Selected Urban Districts, 1961-1962, 100,000 to 4999,999 Population

District	Minimum	Maximum
1. Hammond, Ind.	$5,100	7,700
2. Arlington County, Va.	4,500	7,400
3. Flint, Mich.	4,800	7,032
4. Rockford, Ill.	4,700	6,950
5. Lincoln, Nebraska	4,200	6,500
6. Fulton County, Ga. (ex. Atlanta)	4,140	6,300
7. El Paso, Texas	4,600	6,200
8. Brevard County, Fla.	4,100	5,925
9. Louisville, Ky.	4,000	5,800
10. Escambia County, Fla.	3,800	5,600
11. DeKalb County, Ga.	4,300	5,590
12. Nashville, Tenn.	3,735	5,554
13. Henrico County, Va. (Richmond)	4,000	5,500
14. Knoxville, Tenn.	3,720	5,454
15. Corpus Christi, Texas	4,450	5,360
16. Bibb County, Ga. (Macon)	4,150	5,300
17. Chattanooga, Tenn.	3,920	5,130
18. Hamilton County, Tenn. (ex. Chatt.)	3,400	5,050
19. Jackson, Miss.	3,300	4,850
20. Knox County, Tenn.	3,400	4,720
21. Columbia, S.C.	3,552	4,632
22. Little Rock, Ark.	3,450	4,530
23. Montgomery County, Ala.	3,627	4,527
24. Greenville County, S.C.	3,333	4,290

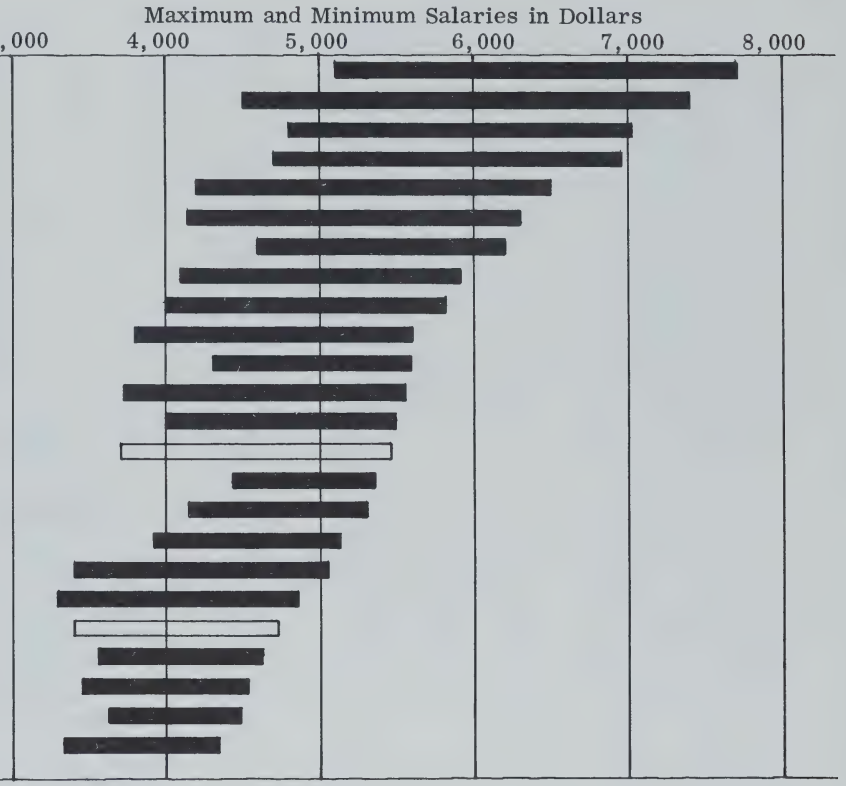
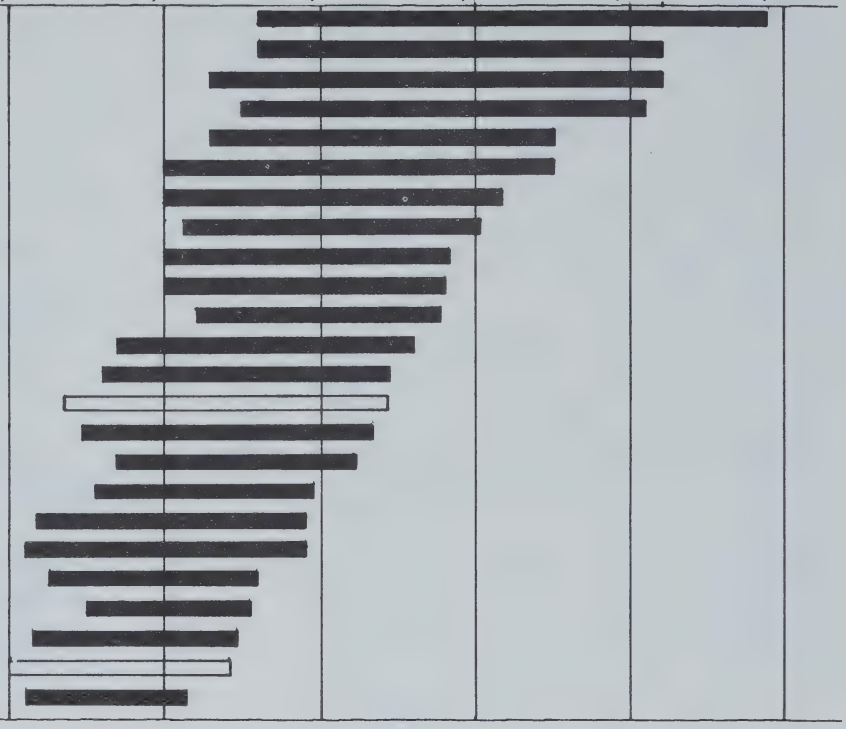


Figure VI

Salary Provisions for Classroom Teachers With Master's Degrees in Selected Urban Districts, 1961-62, 100,000 to 499,999 Population

District	Minimum	Maximum
1. Hammond, Ind.	$5,300	$8,400
2. Flint Michigan	5,184	7,785
3. Arlington County, Va.	4,800	7,700
4. Rockford, Ill.	5,000	7,600
5. El Paso, Texas	4,800	7,000
6. Lincoln, Nebraska	4,500	7,000
7. Fulton County, Ga. (ex. Atlanta)	4,500	6,660
8. Corpus Christi, Texas	4,675	6,550
9. Brevard County, Fla.	4,500	6,325
10. Bibb County, Ga. (Macon)	4,550	6,300
11. DeKalb County, Ga. (Step 2)	4,730	6,278
12. Louisville, Ky.	4,200	6,100
13. Escambia County, Fla.	4,100	5,950
14. Knoxville, Tenn.	3,865	5,935
15. Nashville, Tenn.	3,960	5,815
16. Henrico County, Vir. (Richmond)	4,200	5,700
17. Chattanooga, Tenn.	4,060	5,450
18. Hamilton County, Tenn. (ex-Chatt.)	3,670	5,410
19. Jackson, Miss.	3,600	5,400
20. Columbia, S.C.	3,768	5,100
21. Montgomery County, Ala.	4,014	5,049
22. Little Rock, Ark.	3,650	4,970
23. Knox County, Tenn.	3,500	4,920
24. Greenville County, S.C.	3,605	4,652



1. Teachers with a bachelor's degree must work fifteen years in the City and eighteen years in the County to earn $1,734 and $1,320 respectively in salary increases. This provides little incentive for holding good teachers because the size of increments between steps on the schedule is so small.

2. A person who has spent seven years of specialized training to earn a doctor's degree has little incentive to come into either system as far as salary is concerned. The maximum salary for a doctor's degree is only $1,840 above the beginning salary for a bachelor's degree in the County abd only $2,565 difference in the City after fifteen years of experience.

3. There is no real salary incentive for added responsibility in a classroom teaching position nor for study toward an advanced degree. To get a higher salary, with experience and degree remaining the same, a teacher must leave the classroom and assume an administrative or supervisory position. This does not encourage creativity nor the assumption of additional professional responsibility on the part of the teacher. Teachers should be provided an additional salary increment for study toward a degree.

4. Increases in classroom teacher salaries over the past ten years in the County system have not been possible, partially because of the need for spending additional money for supervisory positions. More such positions at higher salaries are needed. A needed reduction in pupil-teacher ratio by employing more teachers also contributes to lack of money for raising salaries. In addition to the need for higher salaries, more professional personnel are needed.

Professional Development

The percentage of teachers working on advanced degrees in the County school system is more than offset by the high percentage who do not have degrees. Family obligations and lack of sufficient salary incentive are probably two of the primary reasons that more of the teachers do not attend colleges during the summer months. Easy accessibility of the University of Tennessee apparently contributes to the reasons some teachers work on degrees during the summer.

In addition to college courses, both school systems provide some in-service training experience for teachers during the school year. All teachers are members of the Tennessee Education Association, which contributes to professional growth. The State Board of Education also requires a minimum of ten days of planned in-service activities of all teachers in school systems which participate in the State equalization program. The City and County schools meet this minimum requirement by providing planned in-service activities during certain days in the school year. Also, there is evidence that many local school facilities, supervisory and administrative groups, and committees meet often to discuss problems and receive information from various sources. The nature of these career development activities varies from school to school and between the school systems. Some are of decided value. Others are considered by teachers to have accomplished little.

System-wide in-service education is mostly in the form of grade-level or departmental meetings. High school and elementary school personnel meet separately as groups. Usually some provision is made for professional personnel to meet in interest groups. The interests are described in various ways but usually are concerned with general topics such as "Reading Improvement in the Primary Grades," "Science in Junior High," "Child Growth and Development," and grade levels. Usually a consultant assists in these meetings. Local school faculty meetings are primarily devoted to administrative announcements and details such as record keeping and assembly programs. Some faculty groups have worked together in meetings to solve particular problems of instruction.

The University of Tennessee has been a valuable and willing source of help to the schools in professional development efforts. Survey teams, evaluation committees, educational television development, and research are examples of the services provided by the University other than credit work during the school year and in the summer.

Leaves of absence for one year for advanced work are available to professional personnel on tenure in both school systems.

Guidance.

The high schools in the two school systems have guidance counselors. Their position in the school is relatively new as it is in most school systems, and the role of guidance in relationship to teaching is still not clearly understood by all professional personnel. Primarily, the guidance specialists administer tests to groups, test individual students, counsel with students regarding courses or vocations, and take the responsibility for career days. In some cases they perform administrative tasks for the principals.

The guidance functions of these specialists are not yet accepted by all teachers and principals. Professional personnel have varying motives about their role and some consider the role unnecessary.

In some cases the guidance person only administers tests and does not follow his diagnosis into the classroom or help the teachers to see how the results of the tests can be used to make instruction more meaningful to the student. Career days and orientation days are considered by some teachers in some schools to be the main contribution made by the guidance counselor. In other schools the guidance specialist is looked to as a resource for helping the teacher. Unfortunately, this is not the case in too many schools.

The track program in the County has called for a guidance specialist in helping students choose their "track". In some schools this is the major function.

The role of guidance in the two school systems needs examiniation and evaluation in terms of its contribution to effective teaching. Also there is little or no pro-

vision for helping elementary teachers continuously to identify beginning learning problems and symptoms of emotional or mental disorder. If individualized instruction is to be attained, an expansion of guidance and testing is needed and the guidance role should be more clearly defined.

Use of Technology and Teaching Aids

The National Defense Education Act has made the purchase of more audio-visual aids possible in the two school systems in recent years. These materials are made available to the schools through central office material centers.

In Knox County teachers have access to about 900 films and more than 1,500 film strips. In addition to these, there are more than 1,650 recordings, both music and literary, available from the Music Department. Teachers may select materials from the materials center or order them from a catalog, which has been given to each teacher, and have their selections sent to the school. A regular weekly delivery service to the schools for this purpose is maintained. Projectors are available in the schools.

During the first four months of 1961-62 school year, 6,492 films and 3,855 filmstrips were sent to the schools. This figure almost doubled that of the preceding year.

Two high schools in the County system have language laboratories for teaching modern foreign language. These laboratories provide stations for fourteen students to use them simultaneously. Tapes of French and Spanish textbooks, as well as other language tapes, are available. Record players and tape recorders are provided all secondary school languages classes and for thirteen elementary foreign language classes.

The Knox County school system provides two studio teachers for programs offered over educational television by the Metropolitan Educational Television Council, which was organized in 1960.

Each school in the County district has at least one television receiver and some schools have as many as four or five.

A survey made in the County on October 1, 1961, indicated that the following number of classes were viewing the programs:

Third Grade arithmetic	90 classes
Fifth and Sixth Grade Service	137 classes
Seventh and Eighth grade geography	85 classes
Elementary French	16 classes
Literature for Fourth Grade	68 classes

In Knoxville city schools, audio-visual materials are ordered by the individual schools from the materials center located in the board of education building. They are delivered by truck and returned to the center after use. Deliveries and pick-ups are made on Tuesday and Friday of each week.

In the materials center, the city system has 16mm films and 35mm filmstrips, records, recording tapes, 2" x 2" slides, transparencies, and flat pictures. Film and filmstrip projectors, record players, recorders, opaque projectors, micro-projectors, overhead projectors, dry mounting presses, projecto printers, television receivers, screens, and cameras are also in the materials center. The schools have the same equipment except for the presses, printers, and cameras. Each school has one or more filmstrip projectors.

The City schools also use educational television programs and furnish personnel who aid in the production and presentation of the television lessons.

Both school systems provide opportunities for teachers to preview films and both have had audio-visual workshops for teachers.

Library books are made available to elementary schools from the library centers at the central office in the County system. The books are distributed by vans which operate on a regular schedule. High schools in the County have central libraries in the building. All City schools have central libraries as a part of each school.

Both school systems have resources available for a wide-variety of instructional materials and teaching aids. The amount of use varies from school to school, buy in general the quantity of equipment and materials are apparently adequate when considered in terms of their current use in the schools.

Extended School Services

Kindergartens and junior colleges are not a part of the current educational programs in the Knoxville and Knox County school systems.

Summer programs have been provided in a small number of the City schools. These programs are academic in nature and provide an opportunity for advanced work in some of the required high school subjects and for remedial work in the basic skills. The courses are offered in terms of demands of students. Summer programs are not currently offered in the Knox County schools.

Adult education courses are currently offered by the City system. They include adult home economics, evening high school, adult distributive education, vocational training at Fulton, evening trade extension courses, and practical nursing.

Programs offered and their purposes are as follows:

Adult Home Economics--to develop homemaking skills, to encourage creative ability, and make wiser use of time and money.

Austin Evening High--designed to enable adults to secure a high school diploma. Moreover, the three R's are taught for grades one through eight.

Knoxville Evening High School--directed toward the same purposes as the Austin Evening High with the additional purpose of teaching classes in English and citizenship for foreign-born persons.

Adult Distributive Education Department--provides training in distributive and commercial courses. Day and night courses are offered to meet the needs of adults in this type of vocational education. The classes are operated in cooperation with the Knoxville Chamber of Commerce and the Business and Trade Association.

Fulton Vocational Training Center--to train men for satisfactory entrance into trade fields and obtain credit on apprenticeship program.

Evening Trade Extension Department--to increase the skill and knowledge of persons who are employed, or who have been employed, in a trade or industrial occupation.

Practical Nursing Department--to train persons to perform effectively the duties implied and indicated in the definition of practical nursing.

The adult program is supported by vocational funds and fees. The costs are $65.00 for textbooks, registration, and uniforms for practical nursing; $45.00 for vocational training courses; $2.00 for trade extension; $7.00 for a City resident and $12.00 for a non-resident of the City for distributive education; $5.00 for a City resident and $10.00 for a Knox County resident in evening high school; and for eighteen hours in home economics, there is a fee of $2.50 for a City resident and $5.00 for non-City residents.

The total average enrollment in all adult classes during the past school year was 3,670. The largest enrollment was for distributive education (1,535), and the smallest enrollment was in practical nursing, 80.

There has been strong community support and interest in the adult program, and the titles of the courses offered indicate a wide variety of opportunities for continuing education for adults.

Residents of Knox County who live outside the City also participate in the City adult program, but pay an increased fee over that charged City residents.

Research and Experiment

Several experimental projects are currently underway in the schools in Knox County. Educational television, teaching machines, and some ungraded classes are classified as "experimental." Although the special education programs are new, they are not experimental. Their value has been well established throughout the country.

Plans are being made for offering driver-training in the County system, and individual schools are always experimenting with new aspects of the curriculum, such as the newer developments in mathematics, science, and social studies.

Except for the system-wide testing programs, little is being done to evaluate these promising ventures. Research, which transcends the gathering of statistics and is based on a carefully devised research design and controls, has been sporadic and not system-wide. Research dealing with school sites and physical plants has been limited primarily to building surveys which have sometimes failed to take into account the growing population and the changing social, cultural, and economic conditions of the County.

The junior high school program begun by the City was a step forward in solving a space problem in the schools. The effect the program is having on the students and the goals of the educational program have not been measured extensively. The benefits of the adult education program are not determined by a careful follow-up of graduates in an attempt to find better courses or opportunities.

No one person or department in either school system has been charged with the responsibility of designing research and evaluating experimental efforts.

A Summary of Current and Desired Educational Programs

Emerging educational needs caused by developing technology and changing social and cultural conditions have created national concern and interest in education. The schools are regarded as a source for closing the gap between cultural change and technology by providing the nation's citizens with competencies, values, and skills for continued development.

The need to keep ahead of change rather than lag behind it has caused a revision of the educational objectives of the schools to stress concern and need for helping the individual to develop intellectually at a rate consistent with his ability. Individualized instruction rather than teaching to the average is becoming increasingly important, and consequently, curricular content, organization, and teaching methods are changing.

Content is being sharpened by combining many fields of learning into a concentrated and related sequence rather than into individual parts. New concepts are being introduced, and concepts previously regarded as basic are being replaced by newer knowledge. Teachers are developing into specialists in subject matter fields and are acquiring new skills in providing opportunities for effective learning. These specialists are being combined and interrelated through coordinated and co-operative planning of school facilities, and the back-step grade levels and uniform time schedules giving way to flexibility in order to provide time for learning in terms of content and student abilities.

Guidance specialists as resources for the teachers in diagramming individual problems and identifying needs are supplementing the knowledge acquired by the teacher of the individual student and his problems.

Teachers are becoming better prepared to cope with the exploding knowledge and revised methods and technology required for individual instruction. In-service education has become a necessity to keep the teacher up-to-date and to develop new teaching skills and improve old ones in light of expanding knowledge and technical aids. Research is providing a scientific basis for such development.

Teaching machines, television, and other devices are enabling the teacher to use more effectively her talents in teaching individual students. Laboratories for learning by examination and critical appraisal are adding to such technology. Through developments in transportation and communication, the classroom is expanding its walls to include the total community.

The schools in Knox County are being influenced by these trends and even though they have not changed rapidly, progress has been made. The primary barrier to progress has been a lack of community understanding of what the schools are attempting to accomplish and of their relationship to the total development of the metropolitan area.

The curricular content is organized much as it was at the turn of the century. Most of the changes in content have been in the form of added courses, and many traditions have retained some subjects whose value is questionable in the light of changing educational objectives. Most students still attempt to learn subjects in uniform blocks of time regardless of ability and needs, and teaching has not been reorganized to make the most effective use of the many professional competencies teachers possess.

Many teachers in the County schools lack the necessary professional training to make the best use of their abilities and understandings of students. Salaries in both school systems are not sufficient to attract the best qualified members of the profession and give little incentive for professional personnel to work toward advanced degrees or to improve their professional skills.

Technology has crept into the classroom in the form of television, film projectors, slide machines, and other audio-visual aids. Programmed learning or teaching machines have recently joined these devices, but their effective use has not been followed widely.

The vocational education and adult courses offered have provided opportunities for out-of-school youth and adults. Summer programs have initiated an expanded school year. Awareness of the need of continuing education is apparent. Expanding these services can provide for some of the emerging needs of the community.

In the final analysis, the quality of improvements effected in the current educational programs will be directly related to the degree of continuing professional development of the school staffs and the willingness and the aspirations of all the citizens of the community to provide quality in the educational programs. Recommendations for improvement of programs are made in this light.

Recommendations for Developing Quality

In the final sense, it is the classroom teacher who will make a greater quality and quantity of learning possible. Other aspects of the educational program are directed toward assisting the teachers in their responsibilities. Hence, development is necessarily dependent on improved teaching competence and more effective utilization of these competencies in learning process. Recommendations for accomplishing such improvements are included in the statements that follow, which pertain primarily to proposed action of the boards of education and the professional staffs but which also will require that the entire metropolitan area take a serious look at what it can become by 1975.

Flexible Steps

1. Develop a clearer community understanding of the objectives of public education.

    a. Appoint a committee to include lay citizens, professional educators, and students for the purpose of obtaining wide community participation in establishing a comprehensive statement of educational objectives based on identified needs and conditions in the area.

2. Re-examine the curriculum content of the educational program in light of established objectives and make deletions, additions, and other changes in terms of a total twelve-year program.

    a. Analyze the present curriculum content to determine its validity in terms of objectives and its potential contribution to developing independent learning, intellectual skills and understandings, and the adequacy of emphasis given to studies dealing with the understanding of people and their aspirations and dedications.

    b. Assess curriculum content in terms of an objective ability to help develop critical thinking and competence in problem solving.

c. Expand vocational courses for both youth and for out-of-school citizens.

d. Slowly incorporate many of the high school and junior high school club programs into the regular teaching program.

e. Delete portion of curriculum content in individual schools where adequate facilities and equipment are not available or provide these facilities by transporting students to other schools that have them.

f. Expand the special education program to make it a metropolitan program.

g. Make foreign language at least a six-year offering, beginning in the middle elementary grades.

h. Incorporate the newer concepts in mathematics at all stages of the program.

i. Revise the content of biology, chemistry, and physics to include newer developments in these areas.

j. Examine the physical education and athletic programs to determine their proper relationship to, and function in the total school program.

k. Incorporate the courses in Bible into other social studies courses.

3. Reorganize instruction through planned stages to make more effective use of the special competencies of teachers.

a. Identify the special teaching skills needed in each school and recruit and assign teachers to schools who possess the skills needed.

b. Institute team planning as a part of professional responsibility and implement team teaching in elementary and high schools on an experimental basis.

c. Expand the formal teaching environment to include the total community as well as the school classroom.

d. Coordinate the elementary, junior high, and high school programs into a continuous total program for each student.

e. Develop an organizational structure which will establish cooperative use of all physical facilities.

f. Establish criteria for grouping students in terms of their needs, abilities, and achievement, which will be flexible in its administration.

g. Develop high school period schedules in terms of time required for particular groups of students, the content to be learned and the physical space available, and discontinue some uniform time periods.

h. Carefully examine the "track program" in the County high schools in light of stated educational objectives and make necessary changes.

4. Evaluate the present guidance and testing programs in the schools in terms of adequate utilization of these services by classroom teachers.

a. Expand the testing program in the City to include periodic achievement testing in alternate years for all students and intelligence tests at least twice during the student's twelve-year school program.

b. Provide assistance to elementary teachers for diagnosing learning problems of students and taking appropriate steps to solve them.

5. Develop and effectively utilize the professional skills of all professional personnel.

   a. Immediately plan and implement an extensive and comprehensive program for professional development at the local school level.

   b. Require all teachers and principals without college degrees to work toward such degrees to remain employed.

   c. Explore the possibilities of using educational television for certain types of in-service education for teachers.

   d. Plan and implement a professional development program using more extensively the resources of the State Department of Education and surrounding teacher training institutions.

   e. Make use of team teaching, ungraded school organizations, television, and other teaching aids where they can increase the teacher's time for professional work with individuals and groups.

   f. Establish a salary schedule that will attract and hold competent teachers by providing salary incentives for professional study and with minimum and maximum salaries that will be competitive with other school systems in the South and with other professions and industry.

   g. Immediately begin planning and subsequently implement a comprehensive program of in-service education for administrators.

   h. Provide positive incentives to encourage and support teachers in using their skills fully and in undertaking new teaching responsibilities.

6. Expand the use of local school facilities for adult and vocational education in the evening and afternoons.

   a. Plan and implement educational programs for teaching the functionally illiterate to read and write.

   b. Establish trade and vocational programs for assisting out-of-school youth and adults to acquire new skills which will be salable in the community by using shops and facilities in the high schools.

   c. Make use of school facilities for adults who wish to continue their education or develop educational and cultural interests on the same fee basis for all City and County residents.

7. Institute afternoon and evening programs for in-school youth in depressed neighborhoods.

   a. Make recreational facilities in the schools available to youth in the afternoons and provide a supervised recreation program.

   b. Offer individual and small group remedial instruction in the basic skills.

   c. Provide for half-day employment of selected students during the school day in the community and arrange their school schedule and curriculum accordingly.

8. Expand the summer programs and carefully examine the need for kindergartens as a part of the total school programs.

   a. Provide planned educational programs in selected schools during the summer months directed toward identifying and developing special talents of students.

   b. Expand the remedial and "advanced work" curriculum so that it will be available to all who wish to participate.

c. Explore the possibility of summer camps and day camps in cooperation with other community agencies.

d. Make school facilities available for adult programs during the summer months.

9. Budget a percentage of the instructional funds for educational research and experimentation.

a. Conduct research and experimentation in the planning of buildings and locating sites, for evaluating experimental programs, for developing the curriculum, and evaluating teaching and learning.

b. Explore the availability of data processing equipment for compiling research statistics and keeping records which will be used by all schools in the metropolitan County.

10. Expand the use of technological aids in the schools to improve the quality of instruction and better utilize the competencies of teachers.

a. Develop educational television programs as an integral part of the total instructional program.

b. Utilize the best professional talents available for teaching over television by spreading the responsibility to more professional personnel.

c. Expand the development and use of such aids as motion pictures, slides, projectors, and radio.

d. Explore programmed learning in terms of its use for independent study.

e. Make laboratories in language, mathematics and science available to all students by enlarging and renovating existing laboratories, installing them in schools which do not have them, or by transporting pupils during the school day to schools which have such facilities.

f. Institute an in-service program for helping teachers learn effectively to utilize technological aids.

Need for Cooperative Action

The preceding recommendations indicate the need for cooperative and unified action on the part of the two school systems. Efficiency in operation and provision of necessary physical facilities for an educational program of quality are not possible under present conditions. The organizational structure for making unified action possible is not treated in Part II. Regardless of what the nature of the organization might be, cooperation between the two school systems is absolutely essential for a quality program.

Estimated Costs of Some Steps

Some of the preceding recommendations indicate a need for additional annual expenditures by the two school systems. Assuming that the recommendations are implemented by 1975, approximate annual operation costs after 1975 can be estimated for some of the developmental steps in terms of 1961-62 dollars.

An increase of 14,000 pupils by 1975 will cost approximately $2,800,000 per year if one teacher for every 25 students is employed. This figure is based on a conservative beginning average salary of $5,000 per new teacher. Although it is not possible to estimate a cost now, increased college preparation of teachers will also demand higher costs for teachers' salaries even in terms of the current salary schedule. However, it is recommended that all professional salaries be raised, which will increase costs considerably.

Establishment of a research staff and its operation will probably add $50,000 to $75,000 to the annual budget by 1975.

A television channel for educational use will cost approximately $300,000, including the use of professional personnel as talent. Capital outlay costs for building an educational station are not projected because it is felt that present facilities might suffice.

Afternoon and summer programs and adult evening classes in the schools for 20,000 citizens will cost about $2,000,000 per year in additional money by 1975. However, federal funds and/or state funds might be available for subsidizing these programs.

Development Stages

Obviously, the recommended steps must be implemented in stages between now and 1975. Most of them can be implemented immediately at little or no additional cost. Some of them are:

1. The committee to define educational objectives
2. Curriculum study and revision
3. In-service programs at the local school level
4. Internal reorganization for teaching
5. Identifying competencies of professional personnel and using them more effectively
6. Cooperatively utilizing physical facilities.

Increasing quality, therefore, is not going to take a great deal of money. Indeed, the steps recommended will make more effective use of each dollar spent for education.

An important factor in program development is the provision and utilization of physical facilities appropriate to house and facilitate desired school programs. Accordingly, Part III which follows deals with school plant and transportation.

Text References

[1]"Goals for Americans," The President's Commission on National Goals, Booklet Digest, Prentice-Hall, Englewood Cliffs, New Jersey.

[2]NEA Journal, March, 1962. "Focus on Change," a summary of a report by the Commission on the Experimental Study of the Utilization of the Staff in the Secondary S hools, by J Lloyd Trump.

[3]"Minimum Requirements and Regulations," Tennessee State Department of Education.

[4]NEA Research Bulletin, Volume 40, No. 1: Research Division, National Education Association, pp 17 and 31.

[5]"Classroom Teachers Salaries for Urban Districts, 1961-62, 100,000 to 499,999 in Population," Research Division, National Education Association.

Plants

PART III

SCHOOL PLANTS AND TRANSPORTATION

Section One

In the years since most of the school buildings of Knoxville and Knox County were built, the changes that have occurred all about us have been spectacular. Methods of construction, modes of transportation, and the function of the schools within the fabric of the community have likewise changed. There has, a yet, been no dramatic "breakthrough" in school house design, construction, and use, comparable to those we have seen in transportation, communication, and the technologies which support them.

What new changes may occur can only be roughly estimated. The preceding part of this study deals with the educational program and the kinds of personnel the schools will need to prepare people for life today and in the years ahead. The implications of this part of the study reflect themselves in a need for new school plant designs.

Purposes of the School Plant Study

The study of the school plants of Knoxville and Knox County public school districts is aimed at helping the people of Knoxville and Knox County reach the best possible decision regarding their school plants. Specifically, this study was meant:

1. To determine in general the adequacy of the school plants of the Knoxville and Knox County public school systems in terms of present needs and of needs projected to 1975.

2. To estimate what it might cost to make these school plants adequate, where there are inadequacies, for current use and for 1975.

3. To provide some guidelines for over-all planning:

   a. For improvement of school plants.

b. For more efficient use of facilities through merger or contract between the two districts.

c. For expansion to meet future needs.

Study Procedures

The procedures used in gathering information for this part of the study were:

1. The central administrative offices of each system distributed questionnaires to each school.

2. Each school was visited briefly at which time additional information was gathered.

3. Pictures were taken of each school which were supplemented by aerial photographs and maps of each building and site.

4. Each school was classified according to its sector, in accordance with the demographic study areas outlined in Part I.

5. This information was brought together and interpreted in order that school plant needs to 1975 could be estimated.

Standards Applied

Standards were employed which represent the best measures currently being applied in the United States to produce a building adequate for an effective school program.

Evaluation of capacities of schools, their safety and general environmental characteristics, and what improvements are necessary, were based on standards established by the Tennessee State Department of Education.

Situations were encountered where whether or not a hazard or a limitation of a building was "real" was contingent upon various considerations, peculiar to the situation. For example, wood floors above the first floor

are usually regarded as fire hazards in a school. If the school is "split level," the second floor may exit at "ground level," which may be judged as "safe."

Methods of Estimating Building Costs

A basis for estimating cost of buildings to meet immediate and future needs, was developed in terms of school building cost in Knoxville and Knox County for construction completed since 1945. Of 11 junior and senior high school buildings and additions, the mean cost was $13.10 per square foot, with a range of $10.88 to $19.77 per square foot. Of 24 elementary school buildings and additions, the mean cost was $13.63 per square foot with a range of $8.89 to $19.34 per square foot. To estimate the cost of construction, the rule-of-thumb figures of $1,000 per elementary student and $1,500 per high school student were used. These figures are not applicable when schools for less than 500 students are constructed.

The median floor space per student in Knoxville junior and senior high schools is 103 square feet. Elementary schools provide approximately 71 square feet per student. This means that the median cost per student was $1,402 for high schools and $966 for elementary schools. These costs are sufficiently close to the rule-of-thumb figures mentioned above to be applicable.

Data on Knox County school construction costs is less complete. The Young High School Home Economics addition, which is not typical because it is a special-use facility, was only $8.30 per square foot. Two elementary schools were built for a reported $6.75 and $6.69 respectively. In both of these schools auditoriums and gymasiums were combined and library facilities were omitted. Furthermore, it appears that these buildings are comparatively unfinished. Also, the County often uses regularly employed maintenance men for initial rough construction. This would, of course, considerably deminish the cost per square foot of these schools. In all likelihood the cost of school plants in the County, with quantity and quality balanced, would be only slightly below that in the City.

Detailed conclusions are not the purpose of this report, notwithstanding the fact that many observations made here obviously imply prospective conclusions. Descriptive tabulations of buildings and sites along with suggestions as to what might be done to correct their deficiencies appear in the appendix.

Development of the School Plant and its Functions

A school plant is a teaching instrument. That is, the purpose of a school building and the site on which it is located is to provide an environment which supports teaching and learning. A school plant which does not fit the program envisioned is at best a make-shift, and at worse, an obstacle to the learning process.

A school building erected fifty years ago is still a school building, but the educational needs of today are obviously different from those of that time. It would be impossible for this area to "catch up" completely on building needs as they relate to their function. This suggests that some common-sense attitudes toward school plant design, construction, and renovation are necessary. For example:

1. A school building should be designed to meet the educational needs of today, not yesterday; moreover, it should point to tomorrow.

2. It should not impose an inflexible pattern upon tomorrow's program; therefore, it should permit latitude and flexibility for various uses.

3. Its costs, both in initial investment and continued maintenance, should be weighed against the needs to ve served in order that the most in education may be returned for the money expended.

Flexibility in building design is a necessity if the program of the future is to be served. Space will be needed that can be used in a variety of ways, including flexible partitions, easy installation and removal of

equipment, and ready adaptability to large-, medium-, and small-group uses. Requirements for team teaching, use of audio-visual and teaching machines, television and technical and scientific equipment, with the flexible scheduling of time as a likelihood, outmodes the concept of a school building as a series of 30-pupil-per-room units along a corridor, with a minimum of specialized facilities here and there off this corridor.

Durability and low-cost maintenance are premiums which should be sought even more in the design of the school than has previously been the case. Adult education programs with special opportunities for those with unique needs and interests, longer school days, and more extended curricular activities, suggest more intensified use of the school plant. This means that the school plant should be designed to operate day and night throughout the year. Careful, continuous, long-range planning is a critical necessity if public funds for schools are to be wisely spent. It is worth considering that one misplaced class room costs more than this study and more than it would cost to maintain an adequate planning and survey staff for continuous study of local school needs.

What Makes a Good School Plant

Good school plants must be viewed in terms of cost as well as the space provided. Costs per square foot must be compared between buildings of comparable construction as well as their proposed use. For a school plant to be a sound investment, it must be planned to fit the educational program. Evaluation of a building apart from its function as a teaching instrument is not realistic.

A study by the Educational Facilities Laboratory of 100 high schools built between 1956 and 1958 showed that in the south central states area from 21 to 44 square feet were allowed for instructional area per pupil, with a median of 26. The range nationally was higher, up to 55 square feet per pupil. Adding auxiliary and service areas to these, the range was from a median of 75 square feet per child in the southeast to a median of 117 square feet in the north central.

Good school plants must be viewed in terms of cost as well as space. Some common fallacies in evaluating school buildings and their costs may be noted.

1. The cost per square foot is an index to whether or not a new school building is a bargain or an extravagance has little validity unless it is considered along with other aspects, because:

   a. A shell--that is simply a floor, walls and roof--is not nearly so expensive as a complete plant with adequate laboratory installations, lighting, toilet facilities, proper floor and wall coverings.

   b. A common practice of reporting costs per square foot exclusive of furniture and equipment is misleading, as is any report that excludes flexible partitions, drapes, blinds to control lighting, and other adjustments in the plant. Should calculations include the space occupied by the masonry and interior walls, which in some plants is considerable, should arcade areas, loading shelters and porches, drive and parking areas be included? What about landscaping and shrubbery? These cost money and certainly are of value.

2. Distribution of the square footage greatly affects the validity of the space as an investment in education. The study cited above reports a range of 2 to 8 square feet per pupil for the auditorium, and a range of 10 to 23 square feel for gymnasiums, the latter area beginning, as the report suggests, to approach the median square feet per pupil for classrooms. Many communities have brought public auditoriums and gymnasiums, rather than essential educational facilities. This is not to suggest that such things do not belong in schools; it is

to point out that only as the plant is planned to fit the educational program is it a sound investment. Cases are known, for example, where school districts have invested in expensive science facilities and then were unable to procure science teachers. A language laboratory is useless, unless students take language courses.

3. Calculations of allotments for classroom space per pupil are influenced by many factors. If the space is a self-contained classroom and includes storage for wraps, books and supplies, toilet, library, and laboratory facilities (along with a piano or television set) calculations take them into account. If they are provided elsewhere, they are not counted as classroom space. The more of such things provided in areas outside the classroom, the less space is needed per child in the classroom. Many a classroom which on paper appears ample is too small. The reverse is also true.

Space adequate for the student to have the experiences which classroom, laboratory, library, gymnasium, music, art, and study areas make possible is a general criterion. Ways are being developed to make flexible use of space. The multi-purpose room, if properly scheduled, can be as adequate in providing various experiences for students (for food service, dramatics, physical education or study, for instance) as separate facilities would be. However, no way has been found to use a room satisfactorily for gymnasium and auditorium, or study hall and cafeteria, at the same time. In general, the smaller the school the more practical it is to make multiple use of facilities because scheduling is less difficult. The test should be not how much space is provided but what educational services the space will provide.

Construction of buildings for durability and low maintenance costs is both wise and, in the long run economical. A building with a maintenance and depreciation rate of two per cent per year has cost no more after 25 years than a building of three-fourths it price but with a maintenance and depreciation rate of four percent. Comparing types of wall construction

for schoolhouse, one study shows the lowest-cost wall initially costing more when amortized over a 30-year period than another initially costing twice as much because of savings in durability and heat and maintenance.[1]

Likewise, architectural character and aesthetic qualities are essential aspects of school construction. In addition, a new school should be placed near the rim of population growth where good sites are more likely to be available. As the population moves to create a new rim, the school will be nearer more students for a longer period of time.

Evolution of the American School Plant

As the population of towns and cities increased, sanitation, safety, and isolation from neighborhood influences became problems. Compounding classrooms, with an eye to economy of floor space in proportion to walls and of heating costs, produced the multi-story, rectangular building with a heating plant, and later toilet facilities, in the basement beneath. The toilets, walled first with wood and later plaster, were haunted with odors which could only be overlaid with other ordors.

Changes continue and questions such as how much window area should be used in buildings, how much deadening of sound is desirable, what pattern of traffic to avoid hazardous concentrations is needed and what is the best distribution of heat, air, and light are still being debated.

Thus, school plants came to be modified for the purpose of improving their efficiency as tools of instruction. The organically unified school plant, with special rooms and facilities for special purposes in contrast to the building which was really just a compounding of one-room schools, is the result.

Any Knox County citizen who will take a bit of time to visit one of the schools in his neighborhood can usually see evidences of the school plant evolution. He is likely to see school buildings which

have been built in installments. He will also see efforts to modernize the units built at one stage to satisfy the standards set by the next. More modern lighting, for instance, may have replaced the original lighting in the building. Often the necessary rewiring has left scars in walls and ceilings. Plumbing fixtures may be mismatched as newer facilities have been added. Wood floors or stairs may be in one part of the building, concrete in another, and ceiling heights and corridor widths may differ.

Booming enrollments in recent years have necessitated additional buildings, where difficult choices had to be made regarding whether to abandon existing facilities or expand them and, if expanding them was the answer, whether to follow old patterns or build in ways experience had shown to be better. Attempts to evaluate these buildings today force the same choices. Buildings are in use which are hazardous, unwholesome, and inadequate in provisions for certain facilities, which are a bit too expensive to maintain but which are still too good to abandon but too expensive to make satisfactory.

Original school construction now in use in Knoxville dates from 1907. The median construction year for original buildings still used is 1928. Additions to original buildings date from 1926, the median date for these additions being 1953. Only 11 of the 41 separate school plants have no addition to original buildings. Many have more than one addition, one having four.

Original construction now in use in the County district dates back to 1915, the median building date being 1936. Additions date from 1923, the median year being 1954. Only nine of the 40 separate plants do not have additions. There are six additions to one school.

In both districts, building has been sporadic, several buildings or additions coming in one year and none in another. Obviously the near mid-fifty median dates for additions built in the two districts indicates that erection of additions has been concentrated more heavily in recent years.

Some School Site Considerations

Perhaps the most critical considerations in selecting and planning school sites today is the one demanded by the intensifying pressures of traffic. The vision of a community school, located within walking distance of the home, in a rustic, relaxing, spacious atmosphere of wholesome quiet and natural beauty gets dimmer year by year under pressure of necessities facing education today. Beauty, freedom from distracting noises, safety, places to park cars, scooters and bicycles, space for formalized play and playground equipment are needed in the school site.

The modern school needs space with the building far enough back to be free of blind and abrupt entrances and exits. It needs space for traffic lanes of its own, both sidewalks and driveways. It needs space for bus loading apart from other automobile traffic so the bus can be driven without the hazardous necessity of backing up. It needs parking and recreation areas. It needs spaciousness so that foot traffic with sidewalks provided in heavy traffic areas can be spread enough to permit grass to grow. Otherwise, dirt becomes a health and maintenance problem for which the best solution seems to be asphalt or concrete paving.

The bigger the site, of course, the more easily isolation from undesirable community influences. The zoning of areas to limit the kinds of properties that may surround schools or the location of new sites in areas already appropriately zoned is helpful. Standards have been greatly increased to coincide with the need for more neighborhood play area as well as the spread-out type of design of the schools.

Choices in Decisions about School Plants

A full educational program with the appropriate facilities cannot be provided in any but the most densely populated sections of the Knoxville area. To do so in the small outlying schools would be prohibitively expensive. A large investment in a school site can be justified by the fact that land usually does not depreciate in value, especially when its value to the people who use it is considered.

This study is not intended to project specific schools or their classroom needs. This would be the function of a comprehensive analytical survey of all school facilities as they relate to those who use them.

Administration of School Plant Construction in Knoxville and Knox County

The administrators of both the Knoxville and Knox County school systems have worked earnestly to meet the school plant needs of the students who are within their jurisdiction. The pressure of rising enrollments has been particularly great in Knox County in recent years. There is evidence, too, that the building program in the City has been attended with considerable care.

The responsibility for building schools is vested in the superintendent in each system. Much of the planning involves staff personnel whose work is related to the decision to build as well as the mechanics of financing these structures. The business managers along with the directors of census and pupil attendence also have roles. The City re-examines its building needs every two years and utilizes a 1947 survey which set goals for the system.

Both districts involve their professional staff in drafting educational specifications for new buildings, so that the architect and contractor may translate the educational needs into an appropriate structure. Architects' plans indicate future additions.

Both districts employ architects to design as well as supervise construction of their buildings. The County sometimes uses its own maintenance staff, under the direction of the supervisor of buildings and maintenance, but also under the architect's supervision. The City does not use its own regular employees for construction purposes; however, it does have an inspector present as a building is being erected. This inspector is a member of the staff whose responsibility includes insuring the standards set by the architect are employed

in construction by the contractor. This position coincides with the fact that the City has more stringent regulations and code requirments than does the County. Only class "A" construction is used for City schools.

There is very limited planning for future site procurement; however, the City cooperates closely with the City Bureau of Recreation in the cooperative use of school playgrounds and city parks.

There are two critical disadvantages in the patterns of decision making and administration of the building programs of the respective districts. They are:

1. There is no direct line of responsibility for long-range building or site needs within the staff of either system. The superintendents play a very strong role in making these decisions. Apparently no one feels that it is his particular duty to develop and carry out a plan which will assure that community investments in schools will be of long-range value in terms of the education return.

2. What planning that is provided is limited by the lack of money, uncertainty of population growth, and the relatively small size of each system's enrollment.

These deficiencies have resulted in an imbalance of building design, an overcrowding in some schools, a surplus of space in others, and the total absence of a comprehensive land purchase policy of future school sites. Without question, many sites are too small as well as being severely restricted by heavy traveled streets. In addition, the development of adjacent land through the years has caused its value to become prohibitively high as far as school site expansion is concerned.

Because of multiple additions, many school buildings have inadequate libraries and/or cafeterias. This has been the result of the addition of classrooms without adding necessary accessory facilities. It is unfortunate that there are many empty classrooms in some schools while others are severely overcrowded. Planning inch by inch for school plants almost inevitably leads into belind allies.

A perfectly balanced school plant, with just the right amount and kind of site in a proper location, built to require low maintenance and depreciation rates, with pupils to fill it evenly and to capacity, is an ideal never likely to be perfectly attained. Such a plant would strike the balance of providing the most educational value for the least money. That end should be sought. Central, long-range planning, based on continuous study of the program and needs of the district, will not achieve that end completely, but it will approach doing so closely enough to make it worth doing, for one major blunder in schoolhouse construction costs enough to pay for a great deal of such planning. It cannot be said that either the Knoxville or Knox County districts are organized in a way to provide such planning.

Characteristics of Local School Plants

The tabulations for school plant analysis are presented in groups which coincide with the areas described in Figures III and IV in Part I of this study. Descriptions of buildings and sites are grouped into six geographical areas, which are; "old" City of Knoxville; and the north, northeast, east, south, and west portions of the County. These tabulations can be found in the appendix.

The life of a school building depends upon how well it was built, how hard it was used, and how well it was taken care of. Sometime between the fortieth and fiftieth year the issue of whether or not to abandon the building or modernize it will reach a crisis. The building by this time will likely be regarded as obsolete educationally, and many times the cost of rehabilitation is even more prohibited than totally new construction. It is evident from Tables XX and XXII that many buildings in Knoxville and Knox County have already reached or passed this stage in their life span. Many of these structures are without question inadequate.

Bond issues for schools are usually amortized over a thirty-year period. It is reasonable to expect that a school will last at least thirty years as an unquestionably sound investment, without major repairs. Bonding companies obviously, as a matter of good business, stake their investments on such an assumption. Currently, the citizens of Knoxville are retiring school bonds that are 36 years old.

Ages of School Plants in Knoxville

Dates of construction of both original plants and additions have been tabulated in an attempt to suggest replacement needs of the Knoxville-Knox County school districts.

Table XX. AGES OF SCHOOL BUILDINGS - "OLD" KNOXVILLE SYSTEM

Dates of Construction	Years Old	Number Elementary	Number High School	Number Combined
		Original Buildings Now in Use		
1952-61	1- 9	3	2	5
1942-51	10-19	1	3	4
1932-41	20-29	3	4	7
1922-31	30-39	9	3	12
1912-21	40-49	7	0	7
1902-11	50-59	3	1	4
Total Numbers		26	13	39
Median Year Built		1926-7	1936	1928
Median Age		35 yrs.	26 yrs.	34 yrs.
		Building Additions		
1962-	0- 1	1	1	2
1952-61	1- 9	24	5	29
1942-51	10-19	11	4	15
1932-41	20-29	1	0	1
1922-31	30-39	5	1	6
1912-21	40-49	0	1	1
Total		42	12	54
Median Year Built		1953	1952	1953
Median Age		9 yrs.	10 yrs.	9-10 yrs.

The following points should be noted in these tabulations. Half the schools of the city are 34 years old or older. The high school buildings are generally younger, 26 years median. If age forty is regarded as critical in the life of a building, by 1975 all buildings built before 1935 will have reached or exceeded that age. This means that all the existing original buildings might, if they are still in use, be classified thus:

Table XXI. AGES IN 1975 OF EXISTING ORIGINAL SCHOOLS-KNOXVILLE

Ages in 1975	Number Elementary	Number High School	Number Combined
10-19	1	1	2
20-29	3	4	7
30-39	1	4	5
40-49	9	3	12
50-59	8	0	8
60-69	4	1	5
Median Age in 1975	48 yrs.	38 yrs.	49 yrs.

Since half these buildings will be approaching the 50-year mark it seems likely that almost half will have outlived their usefulness by that time, depending, of course, upon how well they are maintained and how eager citizens are to update their school plants. In any case, it seems likely that about half will be so old that new construction is a better choice than rehabilitation.

Similar classifications show that of 54 additions to elementary and high school buildings, half have been made since 1952-3, and are now only 9 to 10 years old, becoming by 1975 obviously only 22 to 23 years old. There will, however, by 1975, be 8 of the 54, or one-sixth, more than 40 years old.

Ages of School Plants in Knox County

Somewhat similar conditions exist in the County system as can be seen from Table XXII.

Table XXII. AGES OF SCHOOL BUILDINGS--KNOX COUNTY

Dates of Construction	Years Old	Number Elementary	Number High Schools	Number Combined
		Original Buildings Now in Use		
1952-61	1- 9	12	2	14
1942-51	10-19	5	3	8
1932-41	20-29	24	3	27
1922-31	30-39	22	1	23
1912-21	40-49	5	1	6
Total		68	10	78
Median Year Built		1934	1940	1936
Median Age		28 yrs.	22 yrs.	26 yrs.
		Building Additions		
1952-61	1- 9	74	13	87
1942-51	10-19	41	5	46
1932-41	20-29	7	1	8
1922-31	30-39	3	1	4
Total		125	20	145
Median Year Built		1954	1955	1954
Median Age		18 yrs.	17 yrs.	18 yrs.

The County schoolhouses are slightly younger than those of the City, though essentially the same generalizations hold, especially considering that there is a difference generallyin the level at which the County has maintained its school plants and the quality of construction it has put into its buildings. In the last 10 years the County has

built 14 of the 78 original school buildings and has also built 87 out of its 145 additions. Indeed, the figures on construction in both districts during the period are somewhat astonishing. The City built 5 of its original plants during that time and 32 of its 54 additions to existing plants. It seems likely that Knox County will replace or need to replace one-fourth to one-third of its school plant capacity by 1975.

Both districts may make their plants last longer by extra care. The balance of advantage favoring investing in maintenance may be expected to shift toward investing in replacement, however, for one-fourth to one-third of the plants by 1975. Obviously, some of the plants are due for replacement already. It is necessary to establish a policy of priorities of replacement of these structures to coincide with the ability of the people to pay for them.

Physical Characteristics and Needs of Present Plants

The descriptions of each school in the appendix may be briefly summerized in the following manner:

For the City of Knoxville, of 38 schools enrolling 21,181 students

14 schools, enrolling 5,789 students, lack both auditorium and multi-purpose room

2 schools, enrolling 570 students, lack an adequate cafeteria

3 schools, enrolling 790 students, lack a gymnasium or playroom

10 schools, enrolling 3,841 students, lack a library

It is obvious that there are severe deficiencies in existing schools.

Site expansions recommended here do not reach the standards set by either the State Department of Education or the National Council for Schoolhouse Construction, but these standards are useful for comparative

FIGURE VII

1961-1962 KNOXVILLE SCHOOLS

CORRELATION OF SITE SIZE TO BUILDING SIZE

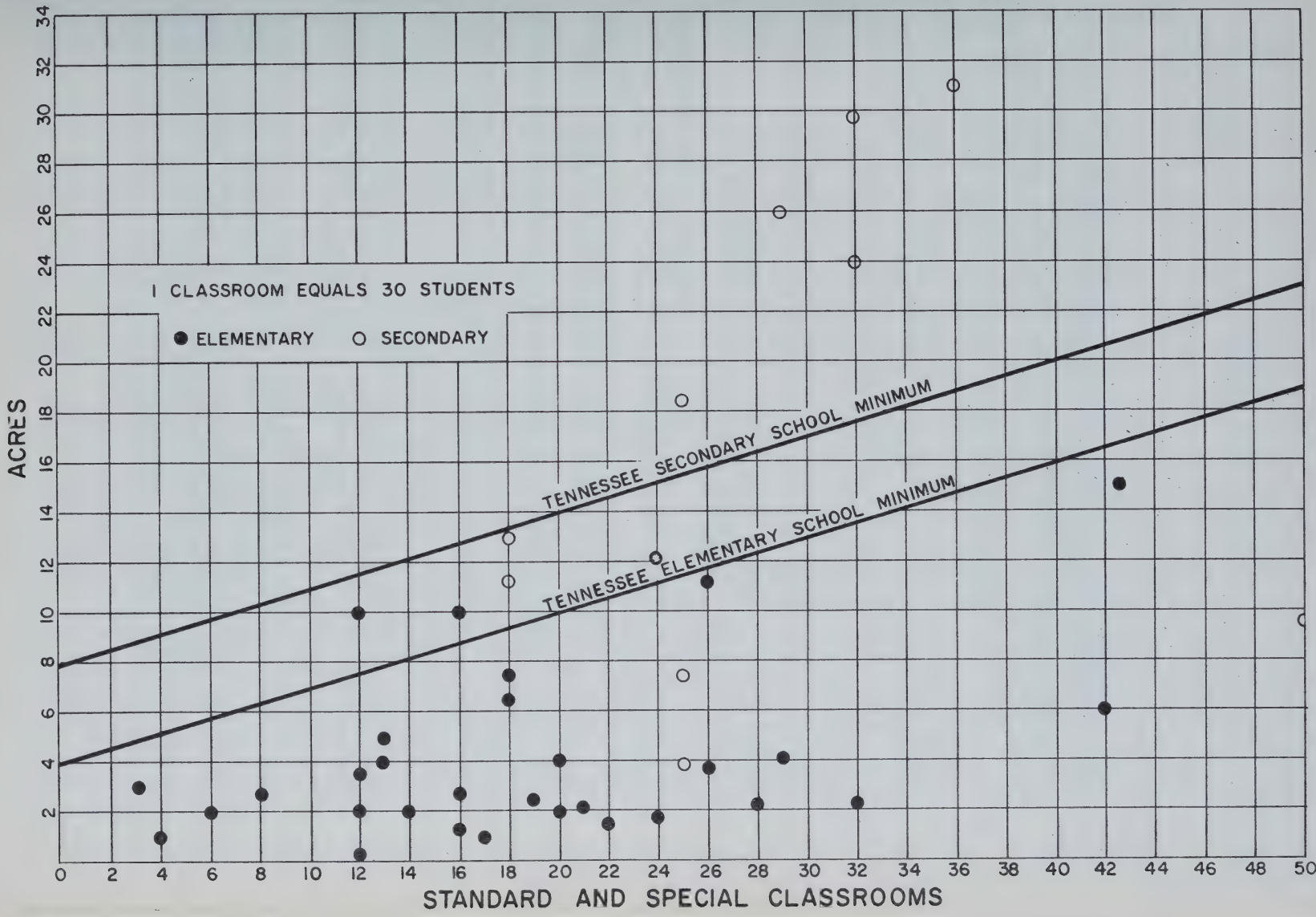
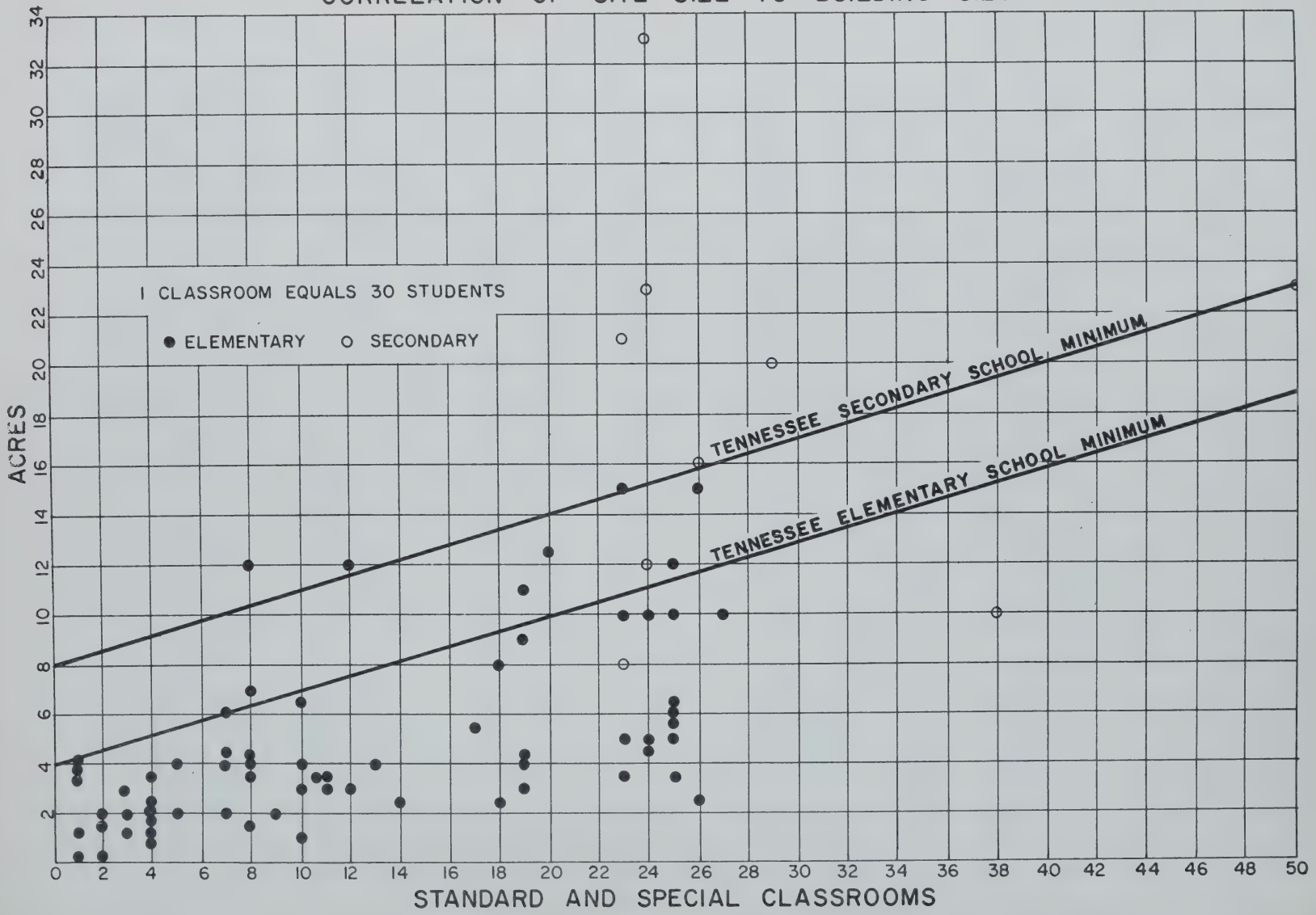

1 CLASSROOM EQUALS 30 STUDENTS
● ELEMENTARY
○ SECONDARY
TENNESSEE SECONDARY SCHOOL MINIMUM
TENNESSEE ELEMENTARY SCHOOL MINIMUM
ACRES
2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50
STANDARD AND SPECIAL CLASSROOMS

FIGURE VIII

1961-1962 KNOX COUNTY SCHOOLS

CORRELATION OF SITE SIZE TO BUILDING SIZE


1 CLASSROOM EQUALS 30 STUDENTS
● ELEMENTARY
○ SECONDARY
TENNESSEE SECONDARY SCHOOL MINIMUM
TENNESSEE ELEMENTARY SCHOOL MINIMUM
ACRES
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50
STANDARD AND SPECIAL CLASSROOMS

purposes and to suggest goals for site planning in the future. See Figures VII and VIII. It does seem feasible to expand sites some, however, and detailed studies suggest an over-all investment of $920,000 in site expansions totaling about 37 acres to be added at the various school plants. At the same time some 10 acres of present school sites should be abandoned. The income from the sale of these sites can be used against the new investment.

The plant abandments would produce a shortage of pubil spaces of some 1,036 elementary students or a need for $1,036,000 for building replacement. This means that Knoxville can expect to spend $1,956,000 to bring its plants and sites up to reasonable standards.

For Knox County, of 78 schools enrolling 32,711 students

41 schools, enrolling 15,938 students, lack both auditorium and multi-purpose rooms

21 schools, enrolling 3,514 students, lack an adequate cafeteria

30 schools, enrolling 4,847 students, lack a gymnasium or playroom

52 schools, enrolling 15,451 students, lack a library

Also, site shortages, for which adjustments are suggested in the appendix tables represent a need for $531,500 for expansion. The tables indicate a deficit of space for 1,808 high school students and 6,092 elementary students. Approximately $8,804,000 will be necessary to construct this space for students. Combining site and building shortages, produces a total need of some $9,335,500 to bring the Knox County school plants up to reasonable standards. Table XXIII provides a breakdown of estimated needs in each of the six geographical areas.

Annexation and Sectors of the County

Table XXIV classifies the same data provided in Table XXIII by separating them for the annexation and non-annexation areas.

There were 53,931 students enrolled in Knoxville and Knox County in 1961-62. The present school plants provide a calculated capacity of over 59,000 for the two school systems. This means that theoretically there is enough space for all the students. It has been pointed out repeatedly that schoolhouses are not in many instances so located that they can be properly utilized. The boundary between the City and County becomes a barrier in some instances, keeping County students from attending closer schools in the City where there is more space. Children do not group themselves automatically to fit classrooms and no formula will provide 100 per cent utilization of school space year after year. A margin of less than 10 per cent for the two systems if combined would not be an unreasonable one to maintain for a good school program.

Furthermore, the facilities provided are, in some instances, unbalanced and below reasonable standards. Of 117 original buildings in use in the two districts 17 are 40 or more years old and should be "depreciated out." This would be at a depreciation rate of 2-1/2 per cent which is generally regarded as reasonable.

An expenditure of some $9,850,000 is needed to replace and expand building facilities of both systems to bring them up to reasonable standards to satisfy current enrollment needs.

Site expansions totaling some 93 acres are recommended at an estimated cost of $1,450,000, to protect existing plant investments and move toward acceptable minimum standards for sites in the two districts. This brings the total estimate to $11,300,000 for the two districts combined, for both building and site needs.

It should be noted that the figures above are for satisfying needs of the present. Suggestions involving gradual adjustments are not considered in these figures.

Some simple arithmetic applied to the sector analysis tables in this study will make it apparent that "the whole is not the sum of its parts." That is, when the figures for the segments (sectors and parts of sectors, the annexation and non-annexation parts, for instance) are added together, they total more than those

Table XXIII ANALYSIS BY SECTORS OF CURRENT SCHOOL PLANT NEEDS, KNOXVILLE-KNOX COUNTY, 1961-1962

Sector	Schools	Margin of Pupil Cap.	Pupil Spaces Suggested to Abandon*	Margin of Pupil Cap. After Abandon	Est. Cost of Construction in Buildings	Est. Cost of Needed Site Expansion	Est. Cost of Construction	Combined Total Est. Cost of Schools
Total Knoxville	High	1,095	1,000	95	--	$ 13,810	$ 13,810	$ 1,956,040
	Elem	3,034	4,070	-1,036	$1,036,000	$ 906,230	$1,942,230	
East	High	122	50	72**	--	--	$ --	
	Elem	240	1,045	-805	$ 805,000	$ 43,300	$ 848,300	$ 848,300
North	High	-413	840	-1,253	$1,879,500	$ 12,775	$1,892,275	$ 4,063,870
	Elem	357	2,440	-2,083	$2,083,000	$ 88,595	$2,171,595	
Northeast	High	17	--	17**	--	--	--	$ 1,067,000
	Elem	168	1,210	-1,042	$1,042,000	$ 25,000	$1,067,000	
South	High	-149	235	-384	$ 576,000	$ 15,000	$ 591,000	$ 1,812,335
	Elem	411	1,470	1,059	$1,059,000	$ 162,335	$1,221,335	
West	High	-21	150	- 171	$ 256,500	$ 9,315	$ 265,815	$ 1,543,900
	Elem	647	1,750	-1,103	$1,103,000	$ 175,085	$1,278,085	
Total Knox County	High	-444	1,275	-1,808	$2,712,000	$ 37,090	$2,749,090	$ 9,335,405
	Elem	1,823	7,915	-6,092	$6,092,000	$ 494,315	$6,586,315	

* These figures include calculated needs, in terms of pupil-space units, of accessory facilities.

** If students were transferred to the East and Northeast sectors, a saving of space for 89 high school students would be accomplished. (Note surplus of 72 and 17 in margins of pupil capacity in East and Northeast sectors respectively.)

Table XXIV ANALYSIS OF 1962 ANNEXATION AND NON-ANNEXATION AREAS, BY SECTORS- CURRENT SCHOOL PLANT NEEDS, KNOX COUNTY

Sector	Schools	Margin of Pupil Capacity		Pupil Spaces Suggested to Abandon*		Margin of Pupil Capacity After Abandonment	
		Annex	Non-Annex	Annex	Non-Annex	Annex	Non-Annex
East	High	181	-59	--	50	181**	-109
	Elem	- 25	265	130	915	-155	-650
North	High	- 300	-113	630	210	-930	-323
	Elem	- 25	382	1,050	1,390	- 1,075	- 1,008
Northeast	High	--	17	--	--	--	17**
	Elem	30	138	190	1,020	-160	- 882
South	High	- 149	--	235	--	-384	--
	Elem	107	304	400	1,070	-293	-766
West	High	-211	190	150	--	- 361	190**
	Elem	328	319	1,090	660	- 762	-341
Totals	High	- 479	35	1,015	260	- 1,675	-432
	Elem	415	1,408	2,860	5,055	2,445	3,647

Sector	Schools	Est. Cost of "Catching Up" in buildings		Est. Cost of Needed Site Expansion		Combined Total Est. Cost of "Catching Up"	
		Annex	Non-Annex	Annex	Non-Annex	Annex Area	Non-Annex
East	High	--	$ 163,500	--	--	--	$ 163,500
	Elem	$ 155,000	$ 650,000	--	$ 43,300	$ 155,000	693,300
North	High	$ 1,395,000	$ 484,500	--	$ 12,775	$ 1,395,000	$ 497,275
	Elem	$ 1,075,000	$1,008,000	$ 45,895	$ 42,700	$ 1,120,895	$1,050,700
Northeast	High	--	--	--	--	--	--
	Elem	$ 160,000	$ 882,000	$ 19,000	$ 6,000	$ 179,000	$ 888,000
South	High	$ 576,000	--	$ 15,000	--	$ 591,000	--
	Elem	$ 293,000	$ 766,000	$ 45,000	$117,335	$ 338,000	$ 883,335
West	High	$ 541,500	--	--	$ 9,315	$ 541,500	$ 9,315
	Elem	$ 762,000	$ 341,000	$ 75,000	$100,085	$ 837,000	$ 441,085
Totals	High	$ 2,512,500	$ 648,000	$ 15,000	$ 22,090	$ 2,527,500	$ 670,090
	Elem	$ 2,445,000	$3,647,000	$ 184,895	$309,420	$ 2,629,895	$3,956,420

* These figures include calculated needs, in terms of pupil-space units, of accessory facilities.

** If students were transferred to East, Northeast, and West sectors, a saving of space for 388 high school students might be accomplished. (Note surplus of 181, 17, and 190 in margins of pupil capacity in East, Northeast, and West sectors respectively.

same figures would if the City and County were treated as separate entities, and especially if they were treated as one whole. Examples are cited in Tables XXIII and XXIV, for instance, in which transfer of students between sectors would effect considerable economy.

Projected School Plant Needs to 1975

The school enrollment projections indicated in Part I of this study will be used here as guides to the total projected school plant needs by sector. It is assumed that students will distribute themselves proportionately in 1975 in accordance with the distribution of today.

Knoxville (City) schools enrolled 21,181 students in the fall of 1961. Their predicted enrollment for 1975 is only 18,578, or about 92 per cent of current enrollment. The County area (preceding the 1962 annexation), on the other hand, can expect an increase from 32,750 in 1961 to 46,625 in 1975, or about 43 per cent.

Table XXV. Predicted Average Daily Membership in Elementary and High Schools.

	1961-62 A.D.M.	1975 Prediction	Gain in Pupils
Knoxville City (1961 Boundaries)			
Grades 1-6 (Elementary)	11,876	10,555	- 1,321
Grades 7-12 (Secondary)	9,305	8,023	- 1,282
Total	21,181	18,578	- 2,603
Knox County (1961 boundaries)			
Grades 1-8 (Elementary)	23,961	34,687	10,726
Grades 9-12 (Secondary)	8,789	11,938	3,149
Total	32,750	46,625	13,875
Combined Systems			
Total (Grades 1-12)	53,931	65,203	11,272

Capacity Requirements for Knoxville Schools to 1975

As indicated in the preceding data, "old" Knoxville is expected to have a total enrollment decline estimated at 2,603 students by 1975. Percentagewise, this is a decline of 12 per cent.

Certain limitations exist in the City's school plants and some facilities should be retired now. By 1975 about half the school plants generally will have "depreciated" themselves out; that is, they will have reached the age when the choice will be crucial over whether maintaining or rehabilitating them is as economical as replacing them. Therefore, it is the part of wisdom for Knoxville to plan a building program keeping well in mind that although its enrollments will indeed decline its capital investment in schoolhouses will depreciate at a rate faster than the enrollment declines. In the period between now and 1975, Knoxville should expect to invest enough to purchase building capacity for about 710 high school and 3,154 elementary students to hold school plants at capacity needed now. Fortunately, at least financially, the need will decline some. There will be a need, according to calculations, to replace space for some 1,833 elementary students, not counting the retirement of space suggested for "catching up" now.

Capacity Requirements for Knox County Schools to 1975

An enrollment increase for Knox County of some 13,875 students will be realized by 1975. In the years between now and 1975 the County will need to retire one-fourth to one-third of its school plant capacity, since buildings will have aged to the critical point by about that proportion. The replacement of several of the older buildings now is recommended. This is included in the figures for "catching up," so that using the lower figure seems in order. For replacement of aging plants, it appears that building to replace high school capacity for 345 students and elementary school capacity for 2,405 students will be needed to hold plants to capacity needs now. Also, however, there will be need for space for 3,149 more high school students and 10,726 more elementary students as enrollment increases. The scale of this undertaking dictates the need for careful re-evaluation of every school building and its relationship to the students it serves.

Where should investments in school plant be made? That is, where should replacements and new buildings be located?

The tables below offer projections made on two assumptions:

1. That increase in enrollment in schools in the sectors will be roughly proportional to the increase in the population in the appropriate age group--i.e., ages 6-13 for grades 1-8; ages 14-17 for grades 9-12.

2. That there will be no radical rearrangement in the pupil transportation pattern or policy of assigning students to schools without regard to proximity.

Table XXVI. Projected Average Daily Membership by Sectors of Knox County, 1975

Sector	A. D. M. 1960-61	Projected Elementary Enrollment 1975 (Grades 1-8)	High School Enrollment 1960-61 (Grades 9-12)	Projected High School Enrollment 1975 (Grades 9-12)
		Prior to Annexation		
East	2,938	3,349	1,744	2,006
North	6,847	9,243	2,797	3,804
Northeast	3,276	4,292	302	370
South	3,659	5,232	1,138	1,627
West	6,489	12,718	2,031	4,021
		After Annexation		
East	1,908	2,237	763	900
North	2,482	3,475	1,417	1,984
Northeast	2,088	2,631	301	346
South	2,123	3,121	- -	- -
West	2,247	4,741	1,128	2,414

Capacity Needs and Requirements in the Annexation Area

For the Knox County school administration, the 1962 annexation represents a very considerable change in its school plant responsibilities. In reverse, it does the same for Knoxville.

Table XXVII. Projected Average Daily Membership to 1975 for Those Parts of Knox County Sectors within the 1962 Annexation Area

Sector	A.D.M. 1960-61	Projected Elementary Enrollment 1975 (Grades 1-8)	High School Enrollment 1960-61 (Grades 9-12)	Projected High School Enrollment 1975 (Grades 9-12)
East	1,030	1,133	982	1,081
North	4,365	5,762	1,380	1,794
Northeast	1,188	1,699	--	--
South	1,536	2,058	1,138	1,525
West	4,242	7,636	903	1,589
Totals	12,361	18,288	4,403	5,989

The annexation area represents 12,596 elementary (grades 1-8) and 5,177 high school (grades 9-12) students currently enrolled--a total of 17,773 to be transferred from the County to the City.

The predicted enrollment for 1975 for the annexation area is 18,288 for grades 1-8 and 5,989 for grades 9-12, a total of 24,277. This means an over-all increase for the annexation area between now and 1975 of an estimated 6,504 students, a 37 per cent increase. The elementary enrollment will increase by 5,692, the high school by 812, about the same percentage for both.

The "New" Knoxville and Knox County Districts

Looking to 1975, the new County faces the prospect of needing to build additional facilities for 4,844

more elementary and 2,032 more high school students, at current prices a need to invest $7,892,000. At the same time, it is estimated that between now and 1975 aging of plants will make it advisable to retire the space for some 1,405 elementary and 345 high school students.

Facing 1975 the "old" City may anticipate retirement of building facilities, beyond what can be released as enrollment declines, representing space for some 1,036 elementary students. The annexed area stands to lose space for some 1,000 elementary students in the same process by 1975. It is necessary to add the facilities to serve the anticipated increase of 812 high school and 5,692 elementary students in the annexed area by 1975.

These building needs, translated into estimated cost are shown on the following table:

Table XXVIII. Summary of Cost Estimates for School Plant Needs Knoxville-Knox County

To Meet Current Needs			To Meet Additional Needs to 1975	
"Old" Knoxville District (pre-annexation)	Sites:	$ 920,040	Plant replacements:	$ 1,833,000
	Buildings:	$1,036,000	Enrollment Increase:	none
			Rounded Total Estimate :	$ 2,000,000
	Total	$1,956,040		
"Old" Knox County District (pre-annexation)	Sites:	$ 531,405	Plant Replacements:	$ 2,922,500
	Buildings:	$8,804,000	Enrollment Increase:	6,910,000
			Rounded total Estimate:	$20,000,000
	Total	$9,335,405		
Annexation Areas only	Sites:	$199,895	Plant replacements:	$1,000,000
	Buildings:	$4,957,500	Enrollment Increase:	$6,910,000
			Rounded total estimate:	$9,000,000
	Total	$5,157,395		

Table XXVIII - Continued.

To Meet Current Needs			To Meet Additional Needs to 1975	
"New" Knoxville with annexed areas	Sites:	$1,119,935	Plant replacement:	$2,833,000
	Buildings:	$5,993,500	Enrollment increase:	$6,910,000
			Rounded total estimate:	$10,750,000
	Total	$7,113,435		
"New" Knox County less annexed areas	Sites:	$ 331,510	Plant replacements:	$1,922,500
	Buildings:	$4,295,000	Enrollment increase:	$7,892,000
			Rounded total estimate:	$11,000,000
	Total	$4,626,510		
Both Districts Combined	Sites:	$1,451,445	Plant replacements:	$4,755,500
	Buildings:	$9,840,000	Enrollment increase:	$14,802,000
			Rounded total estimate	$21,500,000
	Total	$11,291,445		

RECOMMENDATIONS

The central point of these recommendations is to emphasize the need for planning from a perspective that views both the City of Knoxville and Knox County as a whole and places them in the context of their neighbors, their state and the nation. The fact that Knoxville and Knox County have not planned cooperatively as much as these recommendations would urge is hardly surprising. All over America there are communities which have not foreseen the emerging urbanization of life which now brings upon them a tidal wave of problems such as those Knoxville and Knox County face.

Planning to Meet School Plant Needs

Regarding the school plant needs of Knoxville and Knox County, it is recommended:

1. That there be created a central planning agency under the direction of some person. This agency should, through its head, be responsible to the superintendent (or superintendents) of schools and should be given responsibility and authority to administer a coordinated school construction program for the area:

a. By carrying on continuous research regarding pupil distribution and population growth toward procuring proper school sites before they are closed in by commercial and residential buildings, and toward providing schools of proper capacity in locations for the most efficient groupings of students in terms of educational necessities and convenience to students over the longest possible periods of time. Schools should usually be placed near the rim of population growth so that as the rim expands the schools will be nearer to more students for a longer time.

b. By continuous studies of best practices in school plant design for efficiency and economy, and toward development of a feasible, practical long-range plan for financing buildings as needed.

c. By working with the school staffs in developing educational specifications for school buildings and sites and with architects and engineers in translating those specifications into the functional, efficient teaching instruments school plants are meant to be.

2. That special emphasis be given to procurement immediately of sites likely to be good locations for school plants between now and 1975. Land purchased now is likely to cost less than in the future. Even land eventually not used for a school site is not likely to lose its value. It may, indeed become more valuable. Land is not something that wears out and is almost inevitably a sound investment that is never consumed.

3. That buildings be planned to fit the needs of a modern program of education which seems to require:

   a. Buildings that are flexible, easily modifiable, with some movable partitioning and with designs which make additions of convertible architectural units easy.

b. Buildings deliberately designed to provide an environment which supports teaching and learning, so that the building becomes a more efficient teaching instrument. This recommendation implies need for attention to the design of buildings, to control of light, temperatures, sound, and all other elements in the environment as they affect learning, including the aesthetic aspects of room decoration and architectural configurations.

Some Immediate Steps

Some needs, comparatively speaking, are more pressing than others. The descriptive tabulations indicate some needs for priority consideration as follows:

1. Some buildings and parts of buildings, as reported in the descriptive tabulations of this study, should be abandoned or parts removed, in the interest of health and safety of students and the provision of more nearly equal educational facilities for all. Most of those abandoned should be replaced by new facilities on better sites. Obviously the necessity for over-all capacity expansion lies ahead, as figures on anticipated enrollments to 1975 indicate.

2. Site expansions, as mentioned in the descriptive tabulation, should be made so that parking and play areas may be more adequate and more equally distributed among the schools, and particularly that improvements may be made in the channeling of traffic about schools in the interests of safety. It seems likely that costs for such expansions are to be higher in the future than now.

3. Minor adjustments in school plants, such as those suggested by the critical observations made in the descriptive tabulations, should be made in the interest of safety and sanitation. Reference is made to such items as provision of toilet and drinking fountain facilities, safety glass in exit doors, and lighting in dark corridors.

Regarding Merger

The recommendations sketched above obviously call for a total approach to the problems of school plant adjustment and construction for the two districts. It is quite plain that such an approach cannot be taken if the two districts operate separately. It is plain, also, that their separate operation is comparatively inefficient now, compared to what it could be if the two districts were working under some central direction, either by some co-operative commitments to each other or by actually merging. Some of these inefficiencies are pointed out in the finance report of this study. They are illustrated clearly in the case of school plants, however, in that:

1. There are inequalities in the general quality and amount of facilities provided students in the two districts. The City has generally better maintained and more adequate facilities than the County. The student in one system is less likely to have the opportunities represented by library, vocational shop, laboratory and other such facilities than in the other, though there are some exceptions.

2. Underused facilities exist in one system, overcrowded facilities in the other. Classrooms in one school are empty while those in another nearby are overflowing with students. As long as the two districts operate autonomously, the occurrence of such situations seems inevitable.

Such situations, and many others too subtle to describe here, make untenable a recommendation that each of the two districts go its own way.

Based upon the evidence growing out of this study of the school plants of the two districts, the obvious recommendation is that they merge. The agency to be created under the first proposal above would operate best as an arm of an integrated system, with its head directly responsible to the superintendent of schools and, through him, to the Board of Education. Such an arrangement would seem most likely to provide the clear delegation of authority and the

reasonable assurance of continuity to make such an agency effective as an initiating and planning instrument to give the area the kinds and amounts of school facilities it needs and will need in the years immediately ahead.

A second choice would be some firm as possible contract between the two districts which would delegate authority to some such agency authorized to represent both districts and to serve as liaison between them. Such a contract would involve dual financial commitments for its operation as well as agreements which would let the agency cross existing lines of authority in both districts so that it could work with both staffs, join them in common projects on occasion, and, of course, have free access to information. The arrnagement would necessarily involve liaison and double-contact (with superintendents, boards, principals, and others in the two systems) above what would be necessary under a merged organization. Nevertheless, the gains could considerably outweigh these limitations, assuming the two districts should enter into the arrangement in full spirit. Also, a certain amount of such work would be necessary in any effective transition into a full consolidation of the two districts. This is to say that even if the two districts were merged immediately there should be some gradual establishment of communication between personnel holding parallel responsibilities in the two districts, so that new definitions of lines of responsibility may be clarified.

The most serious limitation to this second alternative, however, lies in the fact that no school board can make commitments binding, beyond certain limits, to its successors. It is conceivable that the two boards might establish the agency recommended and make the commitments necessary to give it full implementation, then have the whole arrangement upset when a new board is elected. Even so, this alternative is better than a continuation of the present situation in which each district goes its own way.

At various points in this section on school plants, transportation has been mentioned as a facility for the attendance of children and youth in school and for the utilization of school buildings. More specific attention is given to transportation in the following section of Part III.

Section Two

PUPIL TRANSPORTATION

It is evident that proportionally fewer and fewer students are walking to school. Whether one likes it or not school bus transportation is on the increase; and of those not so transported, fewer and fewer are walking. Many parents drive their children to school since they seem to feel that there just isn't time, due to the tempo of family living, to do otherwise. In addition, it is very hazardous for students to walk to some schools since sidewalks are not provided for them.

There are many problems connected with school bus transportation. After school-hour meetings are omitted because students must board the bus promptly after school is over. There are many athletic affairs, field trips, and other attractions which also interfere with normal school bus schedules.

All evidence points to an increase in pupil transportation needs in the coming years. The concern here is with the transportation of pupils in Knoxville and Knox County.

Purposes and Standards Used

This section on student transportation has the following aims:

1. To determine the general adequacies of the public school transportation system of Knox County in terms of current needs and the needs to 1975.

2. To provide some guide lines for overall planning in an effort to make the system as efficient as possible.

What Makes a Good Pupil Transportation System

A good pupil transportation system:

1. Operates at a high level of safety.

2. Delivers and returns students quickly to get them to school promptly as school opens and home again quickly after school closes. (The time a student spends enroute plus the time waiting, before and after school, is in total an index to the system's efficiency. A consideration also is the time and distance students have between pick-up points and their homes.)

3. Is supportive of a good school program generally, having schedules adjusted to the needs of the schools (rather than the converse) and, as a by-product of its routine operation, serving other school purposes in transporting pupils for out-of-class school events, on field trips, or between schools when course offerings are available in some schools and not others.

4. Operates at a low cost per pupil mile, density of pupil population, road conditions, barriers to routing, and area covered, all considered.

5. Provides reliable service, with adequate arrangements for "resuce" in case of breakdowns and for issuing advance announcements to the public of interruptions because of weather hazards.

Any issue over whether or not a private or school-board-operated system is preferred should be decided upon the basis of how well the system does these things. So also should decisions of policy regarding centralization or dispersal of the operation, specialization of parts of it, or questions of routing and scheduling.

Characteristics of the Knox County Transportation System

Knox County's pupil transportation system is private, i.e. it is operated by individual citizens. The Knox County Board of Education contracts with these individuals to transport students over designated routes on a specified schedule to certain schools.

Contracts are awarded by selection of individual carriers on a merit basis, with cost established through recommendations of the Tennessee State Department of Education. The responsibilities of the individual carriers include:

1. Operation in accordance with the rules and regulations of the Tennessee Department of Education. Each bus that is used is inspected annually through the Division of Transportation of the Department. Alterations and repairs must be made within thirty days after the date of inspection.

2. Each driver must have a physical examination, including eyes and chest X-ray.

3. No individual carrier is permitted to own and operate more than three busses. If an individual does own as many as three, he is required to operate one of them. As a result, there are sixty carrier contracts, and some forty-five owner-drivers.

4. Each driver must have a special chauffeur license issued by the Tennessee State Highway Department upon qualification through a written examination and driving test.

5. Carrier owners must be of good moral character and able to purchase a bus. All new drivers must be between the ages of 21 and 55.

6. All equipment must meet the Tennessee State Board of Education, as well as national, standard specifications.

7. Contracts are awarded for four years, and are renewable annually or for additional four-year periods.

8. Each carrier is required to have the following amounts of insurance:

   On each bus--

   $5,000 property damage each accident.
   $200,000 bodily injury each accident total.
   $20,000 bodily injury any one person per accident.

   On each Station Waggon--

   $5,000 property damage each accident.
   $50,000 bodily injury each accident.
   $25,000 bodily injury any one person per accident.

Each vehicle has an insurance policy. Two insurance companies have nearly all of the insurance contracts which are filed with the Knox County supervisor of transportation. Each contract also includes insurance to cover any emergency rescue carrier to which students may be transferred.

The Transportation Schedule

Busses start morning pickup between 7:00 and 7:15 a.m., depending upon the length of the route, condition of roads, amount of traffic expected, number of students to be transported, and number of schools to be served. Departures after school are at 3:00 or 3:30 p.m., depending upon the school's schedule.

Schools of Knox County have two different schedules. The arrangement is to permit a closer synchronizing of deliveries and loadings with the daily opening and closing of schools. Twenty-six schools open at 8:00 a.m. and close at 3:00 p.m.; forty-six schools open at 8:30 a.m. and close at 3:30 p.m. The supervisor estimates that the time students spend on buses is from 10 to 30 minutes. A few students wait 20 to 25 minutes at an elementary school while the bus makes a second trip before going to the high school. Also, students get to school early or wait after school as much as 20 to 50 minutes, but the same students do not do both. The arrangement requires "relays" so that the 87 buses do 294 trips twice daily, each trip meaning a loading and unloading of students.

Bus stops are kept not more than 1/4 mile apart, in many cases closer where safety makes stops advisable.

Routes, Drivers, and Buses

In 1961-62, there were 95 drivers for some 87 buses and 8 station wagons. Most buses were 66-passenger, a few 54- or 6-passenger, one 73-passenger. Eighty of these were for white students traveling daily a total of 4,078 miles, transporting on the average 14,903 students. There were three buses and three station wagons for negro students, these going 361 miles per day for an average of 254 students.

Total route mileages per day, white, negro, and special education, provided a mean mileage per bus of 61 miles and a median of 52, the range being 30 to 171 miles. The mean for white transportation vehicles daily was 51 miles, for negro 60, the service for special education lifting the totals very considerably. The longer routes were for negro students and for special education students. The longest route for regular white-student transportation was 65 miles per day. Permission has been granted by the State Department of Education to permit an overloading of 20 per cent on buses. This arrangement is to be regarded as reasonable, considering that such overloading takes place only for short distances.

The Division of Transportation of the State Department of Education surveyed the system a short time ago, suggesting routes, rates of pay, and other improvements which were adopted by the Knox County Board of Education. Their plan, worked out for the 1960-61 school year, embodied the essentials of the present operation, though it has been necessary to add a few more routes and buses.

The buses had a mean age of 4.6 years, a median of 5 years, and a range in age of from 1 to 9 years. The Department of Education calculates depreciation of buses through the 14th year but recommends that boards of education not operate buses which have been in service more than ten years.

Drivers' ages had a mean of 43 years, median 42, and a range of 21 to 68 years. State Department regulations call for one physical examination per year until age 65, then two annually thereafter. The district requires all drivers to attend at least once a 20-hour safety school conducted by the State Department of Education. These are conducted every two years, so that first-year drivers may not have the experience.

Ninety-three of the 95 drivers were men. Drivers had a mean of 9 years of experience, a median of 6, a range of 1 to 31 years. A few drivers of long experience lifted the mean above the median. There are 13 drivers with only one year of experience, suggesting that turnover is high among beginning drivers. No information was gathered regarding individual contracts made between bus owners and bus drivers and so information which might explain this turnover is absent.

Some buses were student monitored, but some drivers preferred to be responsible for the discipline on buses themselves. Discipline problems were referred to the school principal of the student involved.

As a back-drop to the concern here that the driver be a "career" driver, experienced, reliable, preferably with a substantial period of service and experience, though not too long, Tennessee does set rather high standards for school bus drivers, and a chauffeur's license and regular check-ups are required. It could be that the turn-over in the first year is, in effect, a "screening" of drivers, with only the better ones surviving.

Control and Administration of the Transportation System

In terms of prevailing practices, the pupil transportation system in Knox County lacks the focus of responsibility which, because of the systems', size and complexity, is deemed essential to its operation. The supervisor of transportation cannot exercise the power which would make it morally justifiable for him to be held responsible by his employers. The high standards set for the operation of school buses in Tennessee are a considerable relief to the local administration, who can simply uphold the standards without formulating policies themselves.

Without doubt it would be much more simple if there was but one owner of the school buses in Knox County. There would not be need to check 60 individual operators, there would be but one insurance policy for all buses, and uniform regulations and routine inspection schedules would be easier to enforce.

The dispersal of contracts does, however, appear to have two values:

1. It distributes the "favor" of a contract for a route to more people. However, when the figures on cost per route are examined and allowances made for capital investment, repair and operating cost of the carrier, and the responsibility involved, the "favor" is not very great.

Drivers earn from $80 to $125 per month. In an alternate plan suggested by the Tennessee Department of Education in its survey providing for public ownership, the suggested salary for drivers was $150 per month.

2. There has been reported some difficulities in school districts where the bus routes have been contracted to only one carrier.[2]

The decision of the carrier to abandon busniess has on occasion left the school district with no method of operating buses. Furthermore, a big carrier sometimes represents a virtual monopoly in the community and may be able to demand a higher price than that for which smaller operators are willing to serve. It is unlikely that two or more firms of the magnitude necessary to manage all Knox County pupil transportation would exist in the community.

A single carrier would, on the other hand, have many advantages in competition with many individual carriers. Centralizing purchase of gasoline, repair parts, and safety checking devices could be done with comparative economy. Also a single carrier would be able to furnish fulltime employment for some drivers. Many public owned school bus systems use drivers at other hours for physical plant maintenance, some extend employment into the summer months.

The personnel who serve the Knox County system are to be commended. There is a high level of cooperation and dedication among them. Indeed it is surprising that such a system can be operated so efficiently with such simple and informal administration.

Cost of the Knox County Pupil Transportation

Cost data are reported in Tables XXIX and XXX on the basis of pupils in average daily attendance transported. All costs are included except the salary and travel expense of the transportation supervisor.

Obviously, segregation is an expensive "luxury" when the cost per student transported, and particularly per capita-child-mile-transported, are compared.

Table XXIX. Direct Cost of Knox County Pupil Transportation System for 1960-1961 (Based on pupils transported in average daily attendance)

Per capita cost:		
White	$ 19.97	
Negro	66.35	
Special Education	190.47	
Cost per capita child mile:		
White	0.00489	
Negro	0.18	
Special Education	0.17	
Total Cost:		
White	$297,712.00	
Negro	16,853.40	
Special Education	26,667.00	
Total direct cost	$341,232.40	(excluding salary and travel allowance of supervisor)

Table XXX. Cost Per Route of Knox County Pupil Transportation System for the Past Three Years

	1958-59	1959-60	1960-61
White	$3,606.33	$3,765.26	$3,721.40
Negro	$2,705.40	$2,705.40	$2,808.90
Special Education	$3,205.80	$3,186.00	$3,809.57

In over-all cost, however, the Knox County pupil transportation system compares very favorably to systems across the state and nation. With a mean cost per student transported in average daily attendance of $20.75 per year, it is below Tennessee and national averages which are $24.82 and $37.30 for the same service, excluding special education transportation costs.[3]

On the other hand, transportation costs vary tremendously, depending in great part upon density of pupil population. A rural route, operating in sparsely populated areas such as remote parts of the state or the great plains of the west, will have much greater costs. Few districts which transport pupils have a greater density than Knox County, so that costs should be well below state and national averages. A fair basis would be to compare Knox County's experience to that of a similar school district.

For this comparison three other Tennessee counties were selected which, in some respects, were similar in their school transportation problems to Knox County: Davidson, Washington, and Cumberland.[4] Despite the fact that none of these comparison examples is wholly ideal for this purpose, some of the comparisons are of value.

Table XXXI. Comparison of Knox County Pupil Transportation System with Three Other Tennessee Counties, 1959-1960.

Factors	Knox County	Davidson County	Washington County	Cumberland County
Density of Population	233 per sq. mi.	245 per sq. mi.	90 per sq. mi.	27 per sq. mi.
Miles one-way transported	2,473	4,683	1,748	894
Number schools served	64	87	24	23
Pupils enrolled for transportation	15,674	21,107	7,459	3,449
Total Cost per year	$309,533	$440,925	$122,371	$66,696
State Allocation under Minimum Foundation	$113,000	$217,427	$121,701	$116,366
Per capita cost for year	$21.29	$23.62	$17.48	$22.17
Type of ownership	Private	Public	Public	Public

Knox and Davidson Counties are alike in that both are urban-center counties of considerable population. As opposed to Knox's privately-owned system of pupil transportation, Davidson's is publicly owned. Knox County's per capita child cost is a little below that of Davidson County, despite the fact that the density factor, which is presumed

to be related to cost of operation, throws the advantage to Davidson. That is, with population density high, costs per child should be lower.

In all fairness, however, it should be pointed out that Davidson County provides considerably more service, and the efficiency of its operation, considering the margin of service offered, is a bit greater. As a matter of policy, Davidson delivers students to within 1-1/4 miles of their homes, whereas Knox County takes no responsibility for going closer than 1-1/2 miles. Furthermore, Davidson County uses its buses to deliver students for extracurricular activities, field trips, conferences and other activities. The operation of a school transportation system in a variety of ways to support the school program seems an accepted function, while Knox County limits the operation simply to getting students back and forth to school. This difference, assuming equal efficiency between the two districts, saves the Knox County district $2.33 per pupil transported per year by comparison.

Washington and Cumberland Counties are far less dense than either Knox or Davidson. Washington does have a sizeable urban center, Johnson City, with some 25,000-30,000 population. Both could justify a considerably higher expense per student transported than either Knox or Davidson Counties, since their densities are far less. Actually, however, they do not do so, Washington being most economical of the four.

In all, it appears that the Knox County system, with a limited offering of services to the schools, is well managed and conservatively operated. Despite the fact that its bus owners must pay federal and state motor fuel taxes it is still able to operate on a competitive basis in comparison to public-owned systems. It does not, however, offer as much in service as some of them, and some operating in situations which theoretically are comparatively disadvantageous are able to do at a slightly lower cost per child.

It is significant to point out that the Transportation Division of the Department of Education, which recommended the general framework of the plan now in use in the County, offered an alternate public ownership plan, with estimates of the cost for transportation of white students. The estimate was a total cost of $241,316.75 for the year 1960-61, including depreciation on buses and service facilities. The actual cost of the plan now in

operation was $297,712 for 1960-61, for transportation of white students. Assuming the accuracy of the Division's estimate, the public ownership system would be more economical.

Concern for Safety

If anything appears clear from this report, it is that all of the systems have good safety records, despite scattered accidents. A few more years of such records should be an important consideration in evaluating the system. Certainly safety in pupil transportation is a prime concern. At this point, the public of Knox County can have confidence that its school transportation safety record is good.

The people of Knoxville and Knox County should know that in general school bus transportation over the nation has high standards of safety and that great care is taken to maintain it. Dr. Norman Key, secretary to the National Council on Safety Education, has declared it to be the safest of all methods of transportation.[5] Specifically, during 1957-58, when 11,343,132 pupils were being transported 3,750,000 miles per school day in 170,689 buses, the record for the nation in school bus casualties was 64 pupils killed (35 crossing the highway, 29 in buses), 1,580 injured, 7,186 accidents.[6]

Projected Pupil Transportation Needs

It seems reasonable to expect demands for pupil transportation in the Knox County school district to increase at least in proportion to the school population, and it is likely to increase even more. Much depends, however, upon school administrative policy. Knoxville, providing no transportation for its students now, represents an "unknown quantity" in school transportation possibilities. A system of pupil transportation would, even now, help the administration deal with some problems of imbalance in enrollments, making it possible to transfer students from crowded classrooms to those where there is enough space.

Obviously a pupil transportation system cannot grow in Knoxville unless the administration establishes it. How extensively it might be used if introduced is not

projected. A merger of the two districts would probably mean an extension of the existing County system into the City. In fact, annexation brings into the City an area where students and parents are accustomed to the service and will place the Knoxville administration in an inconsistent position unless it either abolishes the operation in the annexed area or extends it to the remainder of the City.

By 1975 school enrollments in Knox County are expected to increase over-all about 50 per cent. Use of the school bus can also be expected to increase by at least 50 percent, even though new buildings may be more strategically located so that more students may walk.

The nationwide trend is for the percentage riding school buses to rise. The estimate is that by 1975 about 25 per cent more of the students enrolled will ride the school bus. At present some 15,157 ride in Knox County. The projected increase of 50 per cent in the enrollments by 1975 suggest that 22,735 will do so by that time. It is possible that another 3,789 may take up the pattern by 1975, for a total then of some 26,000. Of course, much depends upon school administrative policy.

Recommendations

1. A centrally organized system of pupil transportation should be established to serve the schools of Knoxville and Knox County. The organization should be such that responsibility is focused upon one officer, such as a director of pupil transportation, who would have broad powers commensurate with his responsibility to operate a safe and efficient system.

2. If the two districts do not merge, the Knox County school district should contract with the Knoxville district to maintain a pupil transportation system to serve the transportation needs, since the Knoxville district is not eligible to receive state funds to aid in the operation. This means that the City of Knoxville should contract with the Knox County school board to pay the estimated net cost per Knoxville student. Presumably, the State Minimum Foundation allotments for transportation

now being paid to the County may be continued on the same basis. The needs in the annexed area will require the most serious consideration.

3. The relative merits of a privately owned and a publicly owned system should be carefully weighed. If the private system is continued, the Knox County Board of Education should acquire one or more buses and/or station wagons so that:

   a. Service may be provided in transporting students to extracurricular events, on field trips, and between schools for use of special facilities. Shortage of shop facilities in one school, for example, could be met by transporting students to available facilities elsewhere.

   b. Emergency facilities may be available to take care of accidents and breakdowns on the regular routes.

4. If the decision should be to enter into a public ownership plan, the movement into it should be gradual. Such a transition might be made over a period of at least five years so that private carriers now serving the district may have a fair opportunity to retire their investments in equipment.

Regarding Merger

The lines between Knoxville and Knox County now represent a barrier to equal education service to students. In many ways students in the County lack some of the advantages the City provides its students. In the matter of pupil transportation, however, the reverse is true; it is the County which provides transportation to students who live more than 1-1/2 miles from school.

Some problems of distributing students to fit available physical plant facilities have been described. An efficient pupil transportation system helps make possible the maximum use of plant facilities, providing a way to transfer students from overcrowded areas to those where there is space, providing inevitably needed flexibility for a school district in which population is shifting.

The present barrier between City and County systems can be removed, insofar as pupil transportation is concerned, by a clear, carefully-made agreement between the two districts. Its negotiation may or may not be a considerable obstacle at the moment; the commitment of school boards in a contract over a long period is not, however, an inconsiderable one, for there are limits to how far such bodies can bind their successors. Obviously, such obstacles would be removed were the two districts merged.

Of course, financing for school plants and transportation as well as for the other components of the education enterprise is an important matter for study. Consideration of this problem is given in the ensuing Part IV of this report.

Text References

[1]David A. Pierce, Saving Dollars in Building Schools, Reinhold Publishing Corporation, New York, 1959, p. 102.

[2]Conference with T. Wesley Pickel, Coordinator, Division of School Plant, Pupil Transportation and Special Services, March 23, 1962.

[3]Statistics of Pupil Transportation, Office of Education, U. S Department of Health, Education and Welfare, OE-20022-60, Washington 25, D. C., August 1961.

[4]State of Tennessee Annual Statistical Report, Department of Education, for Scholastic Year Ending June 30, 1960, Nashville, Tennessee, pp. 138-139.

[5]Nations Schools, Vol. 65, No. 5, May 1960, p. 73.

[6]Nations Schools, Vol. 65, No. 5, May 1960, p. 75.

Financing

PART IV

FINANCING THE PUBLIC SCHOOLS

Efforts to achieve better school programs, better professional personnel, better educational plants and facilities are dependent, to a considerable extent although not entirely, upon the financial effort and support people are willing to provide for education. Numerous studies reveal the direct relationship between the quality of education and the amount of financial input.

Moreover, a direct relationship exists between the extent of financial support for education and the economic and social well-being of an area. In a very real sense, financial support for better shcools is an investment in people that produces returns and dividends of more than solely educational benefits. It is then even enlightened selfishness to put needed financial resources into the improvement of education. With good schools an area can attract higher quality industrial development, raise income levels, and minimize public welfare and protection expenditures. This represents something of a self-feeding cycle. The more invested in good education the more money there is that can be devoted to other purposes. But unfortunately perhaps, the returns on the investment in education are not immediate. The rewards are of a more long-term nature and time is necessary.

In an area which is not pre-eminently blessed with abundant economic resources, but in which people desire better schools, the necessity for efficiency and economy in the educational investment is pressing. As much as possible must be realized from each dollar provided and used. And to realize the greatest economy and efficiency, the luxury of long-standing operational modes must often give way to more fruitful means of planning, policy formulation, program development, and appraisal.

Financing the public schools of Knox County and the City of Knoxville is a very complicated matter. To present all the details would obscure the facts that are essential to policy appraisal and development. Therefore, only such key factors will be presented as the relationship of school financing to the financing of general government in Knox County and the City of Knoxville, present programs of financing education in the two school systems, appraisal of trends in revenue receipts and expenditures, projections of expenditures and revenue required to 1975 using different quality assumptions, and the relationship of alternative organizational structures to school financing.

General Trends to 1975

As these key factors are considered, they should also be viewed in the light of probable transitions that will affect school financing generally. Sufficient evidence is available for the entire nation to make certain predictions with reasonable confidence.

1. The people of the nation are demanding and will continue to demand a better quality and a greater quantity of public education. Technological change and international competition alone are exerting sufficient pressure to make this inevitable. Knox County does not exist in a vacuum. It exists in Tennessee, in the United States and in the world community of nations. Therefore, Knox County must provide in future years a better quality and a greater quantity of education than is now being provided.

2. Public school expenditures will more than double in the nation during the next ten years. School expenditures have more than doubled in the nation during the past ten years. Numerous studies of this matter by qualified experts show that this trend will continue. Continued improvement in the quality and the quantity of education has a price tag.

3. Educational expenditures in the nation are going to increase more rapidly than national income. Therefore, the educational budget will comprise a higher per cent of the national income than at present.

4. Expenditures for all state and local governments will increase during the next few years and there is little evidence to indicate that there will be a reduction in the budget of the Federal government. Any reduction in the defense expenditures of the Federal government is likely to be accompanied by an increase in domestic expenditures.

5. The competition for tax sources by different levels of government will increase. It will become progressively more difficult to obtain the increases in local property taxes. More than 70 per cent of the national income is now derived from salaries and wages and about 91 per cent from salaries and wages, professional income and income from incorporated and unincorporated business enterprises.[1] These sources of income can be taxed more equitably by income, sales and excise taxes than by property taxes. Schools, therefore, should obtain more of their revenue from these sources. However, the states and the Federal government can levy and collect most types of non-property taxes more efficiently than local governments. This suggests that much of the additional revenue needed to finance the public schools in the future will have to be obtained from state and Federal sources. Additional school revenue will be obtained from property taxes in the future but property tax increases cannot provide all of the additional revenue needed.

6. Since taxes in the future are likely to be relatively a greater burden than at present, the public is going to demand more efficiency in all government but especially in local government. There will be an increased demand that unnecessary duplication of services by local governments

be eliminated. These demands will undoubtedly call for improved organization and administration of all governmental services including public education.

General Governmental Financing of Knox County

Most of the functions of general County government in Knox County, with the exception of schools, are administered by the Board of Commissioners. The Knox County Quarterly Court adminsters the functions of general County government not administered by the Board of Commissioners and in addition exercises fiscal control over the public schools of Knox County by approving the County school budget, sets the County taxes for maintenance and operation, and issues school bonds. County maintenance and operation taxes, with the exception of the tax for transportation, and the proceeds of County-wide school bond issues are divided between the County and the City school systems in proportion to average daily attendance. Therefore, the Court exervises some degree of fiscal control over the Knoxville City schools as well as the County schools. In addition, the Court issues rural school bonds for the County schools only, pledging for their retirement the annual income of that part of the County lying outside the limits of the City of Knoxville from the state capital outlay allotment, the beer tax, the amusement tax and the alcoholic beverage tax. Thus, the most important function of the Knox County Quarterly Court is school government.

Table XXXII contains an analysis of revenue and appropriations adapted from the 1961-62 budget of the Knox County Quarterly Court.

Most of the appropriations of the Quarterly County Court are for the public schools of Knox County and the City of Knoxville. Of the appropriations totalling $15,762,649, the sum of $7,913,302 was appropriated for the Knox County schools and $2,414,000 for the Knoxville City schools, making a total of $10,327,302 for the public schools of the County and City. To this amount should be added the debt service payments made to retire school bonds. The debt service on the County-wide school bonds for 1961-62 was approximately $484,000 and on rural school bonds $631,088, making a total debt service for

Table XXXII: Analysis of Knox County Revenue and Appropriations for Year Ending June 30, 1962

APPROPRIATIONS

Operating Fund Budgets		
County Purposes (Including Social Security)		$2,399,464.00
Highways and Bridges		1,348,620.00
Schools (Knox County)		
School-- Current Operating & Maintenance	$7,531,302.00	
School-- Transportation for Rural Schools	382,000.00	
Total County Schools		$7,913,302.00
Schools (City of Knoxville)		$2,414,000.00
Debt Retirement Fund Budgets		
General Sinking Fund (Inc. Prin. & Int.)	1,056,175.00	
Special Sinking Fund (Rural School Bonds)	631,088.00	
Total Debt Retirement Fund Budgets		$1,687,263.00
TOTAL APPROPRIATIONS FOR ALL BUDGETS		$15,762,649.00

Table XXXIII: Knox County- Source of Funds

Current Revenue		
Local Tax ($3.54 per $100 assessed valuation)		$ 8,673,000.00
Other County Revenue (Delinquent taxes, ad valorem taxes, fees, licenses, etc.)		$ 1,817,473.00
Local Current Revenue Required		$ 10,490,473.00
Accumulated Revenue From		
Highway Fund	$ 31,000.00	
Debt Retirement Fund	222,414.00	
School Current Operation & Maintenance Fund	46,867.00	
Total Appropriations From Fund Balance		300,281.00
Net Local Revenue From All Budgets		$ 10,790,754.00
State Contributions		
Gasoline Tax for Highways	$ 575,000.00	
State Tax & Other Funds-Schools	3,208,700.00	
Income & Beer Tax-County Purposes	36,000.00	
Alcholic Beverage & Sales Tax for Rural Debt Retirement	306,000.00	
State Transportation Funds	164,860.00	
Total State Contributions		$ 4,290,560.00
Federal Funds		
Veterans' Program-Lunch Room & Subsidy for Rural Schools		$ 681,335.00
TOTAL REVENUE REQUIREMENTS FOR ALL BUDGETS		$ 15,762,649.00

schools of $1,115,088. Therefore, the budget of the Quarterly County Court for 1961-62 included approximately $11,442,390 for the public schools of Knox County and the City of Knoxville which was 72.6 per cent of its total budget. The financial report of the County Court for the fiscal year ending June 30, 1961 showed that bonds and notes outstanding of the County totaled $15,860,000 on June 30, 1961. This amount was itemized as follows: County-wide school bonds - $6,140,000; rural school bonds and notes - $8,294,000; other County indebtedness - $1,426,000.

The 1961-62 County budget shows the following County tax rate for 1961.

Table XXXIV: Knox County Budgeted Tax Rate- 1961-1962

Schools	
School- Current Operation and Maintenance	$ 2.21 (a)
School- Transportation for Rural Schools	.07 (b)
Total Schools	$ 2.28
Debt Retirement	
Sinking Fund (Including Interest)	$ .35 (c)
County Highways	.27
County Purposes	
General Purposes (Including Social Security- State and Federal)	.64
TOTAL RATE IN COUNTY	$ 3.54

(a) Divided between the County and City school systems in proportion to average daily attendance.

(b) For County schools only.

(c) Approximately $.18 was for the purpose of retiring County-wide school bonds. (Of the total county-wide Bonds and Notes outstanding on 6/30/61, plus interest requirements to maturity, schools represent 82.5%, or approximately $ .29 of the $ .35 for the sinking funds)

In order to appraise the burden of this tax rate, it is necessary to consider the proportion of market value at which the County Assessor asses property. The Tennessee Taxpayers Association[2] estimates that property in Knox County is assessed at 25 per cent of market value and County officials estimate that property is assessed at one-third of market value. If the estimate of the Tennessee Taxpayers Association is used, the County taxes are equivalent to only .89 of one per cent of the market value of property. If the County officials' estimate is used the tax rate is equivalent to 1.18 per cent of the market value of property. Using either either estimate the County tax rate is comparatively low because in many sections of the United States a tax rate is not considered excessive unless it is equivalent to three per cent or more of market value.

The assessed valuation of the County in 1961-62, including the City as assessed by the County Assessor, was $261,631,947. Property is being reassessed during 1961-62.

General Governmental Financing of the City of Knoxville

The Knoxville City Council operates the general functions of city government, exercises fiscal control over the public schools of the City of Knoxville by approving the City school budget, levies City property taxes and other taxes shared in by the schools, and issues bonds including school bonds.

The City operates on a fiscal year which begins January 1 and ends December 31. Following is a list, furnished by City officials, of Knoxville City expenditures for the fiscal year ending December 31, 1961:

Purpose	Expenditures
Debt Service	$ 3,155,945.51
General Government	139,473.66
Finance Department	200,359.97
Law Department	39,115.68
Safety Department	2,256,936.44
Service Department	1,000,625.84
Welfare Department	737,427.77
Library	250,351.78
Schools	6,153,532.60
Transportation	4,313.03

Purpose	Expenditures
Hospital	$ 864,509.43
Planning Commission	33,800.00
Auditorium	120,711.35
Traffic Engineer	10,200.00
TOTAL	$ 14,967,303.06

For the fiscal year ending December 31, 1961, of a total expenditure of $14,967,303.06, the amount of $6,153,532.60 was expended for schools. To this amount should be added the proportionate part of the debt service payments made to retire bonds issued for schools. The auditor reported a total City indebtedness of $33,105,000 as of December 31, 1961. Approximately one-third of this indebtedness was for schools. The debt service on school indebtedness was $924,441. The state provided a capital outlay allotment of $147,155 to apply to this amount. Therefore, for the fiscal year ending December 31, 1961, the City of Knoxville expended approximately $7,095,973.60 for schools which was approximately 47 per cent of its total expenditure.

Although the City appropriates approximately half of its total budget for schools, most of the funds it appropriates for schools are obtained from the County and the state. The financial report of the Knoxville City Board of Education for 1960-61 showed that of its total revenue receipts for maintenance and operation of $6,679,804.60, the City provided $2,055,803 and that the remainder was derived from other taxing bodies.

The City tax levy for all purposes including debt service in 1961 was $3.10. The City of Knoxville Assessor assessed property in the City of Knoxville at $239,618,755 for 1961. Since the City appropriated $2,055,803 for the City schools in 1960-61, that was equivalent to a tax rate of approximately $.86. To this amount should be added a tax rate of approximately $.33 to retire school bonds not retired from the state capital outlay allotment, making an equivalent tax rate of $1.19 for school purposes in the City of Knoxville. It should not be assumed that all of the City appropriation for schools is derived exclusively from property taxes because it is paid from the general

fund which includes many non-property sources of revenue. The school appropriation is expressed in a property tax merely to show the relationship to the property tax potential.

The City Charter requires a minimum levy of $.50 for schools, $.45 for maintenance and operation and $.05 for capital outlay. The state law requires a minimum levy of $.15 for an independent city system. Therefore, the present City levies for schools are well in excess of charter and state requirements.

The charter limit of property taxes for general purposes is $1.85 and the 1961 levy was $1.83.

To examine the relative burden of a City tax rate of $3.10, the Tennessee Taxpayers Association and City officials concur in estimating that the City Assessor assesses property at approximately 45 per cent of market value. Therefore, the present tax rate of $3.10 is equivalent to a tax rate of approximately $1.40 on property assessed at market value. City taxpayers pay County taxes as well as City taxes. It has been estimated above that the County tax rate is equivalent to $.89 levy on the market value of property if the estimate of the Tennessee Taxpayers Association is used and $1.18 if the estimate of County officials is used. Therefore, the total tax rate in 1961 in the City of Knoxville ranged from $2.29 to $2.58 per $100 market value of property. While this is not an excessive tax rate, neither is it a low rate for property taxation.

Financing Knox County Schools

In this section, trends in revenue receipts and expenditures of the Knox County schools will be presented.

Revenue Receipts

Table XXXV presents trends in the revenue receipts of the Knox County schools using five year periods beginning with 1950-51 plus an estimate for 1961-62. It is difficult to appraise trends from this table because of the involvement with the City schools.

Table XXXV Trends in Receipts for Public Schools of Knox County
(Excludes revenue receipts for debt service)

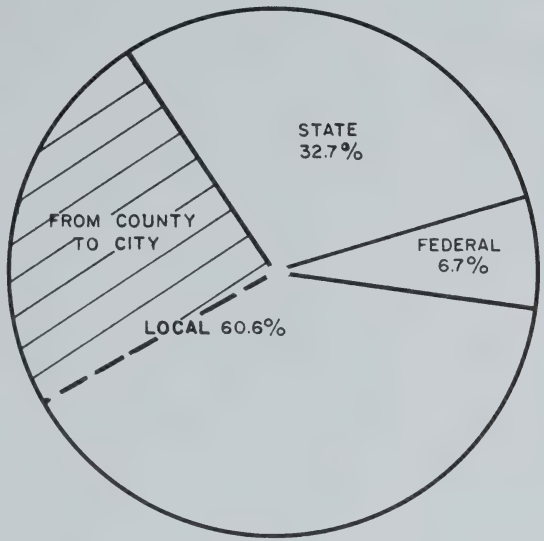
Source	1950-51	1955-56	1960-61	1961-62*
Revenue Receipts:				
State	$ 2,313,374	$ 2,022,747	$ 3,558,939	$ 3,685,940
Federal Government	169,224	712,282	582,852	696,335
County	1,991,379	3,566,599	5,230,444	6,257,407
Other Funds From Other Systems				
Total Revenue Receipts	4,486,757	6,301,628	9,372,235	10,639,682
Total Non-Revenue Receipts	243,159	3,467	2,192,733	
Total Revenue and Non-Revenue Receipts	4,729,916	6,305,095	11,564,968	10,639,682
Less:				
State funds appor. to City	1,175,389	10,742		
Federal funds appor. City	4,001	4,673	4,592	5,000
County funds appor. to City	587,966	1,239,748	1,669,178	2,378,500
Commissions appor. to City	23,207	24,177	32,654	35,500
Total Net Revenue and Non-Revenue Receipts for County	2,939,353	5,025,755	9,858,544	8,220,682
TOTAL NET REVENUE RECEIPTS FOR COUNTY	$ 2,696,194	$5,022,288	$ 7,665,811	$ 8,220,682

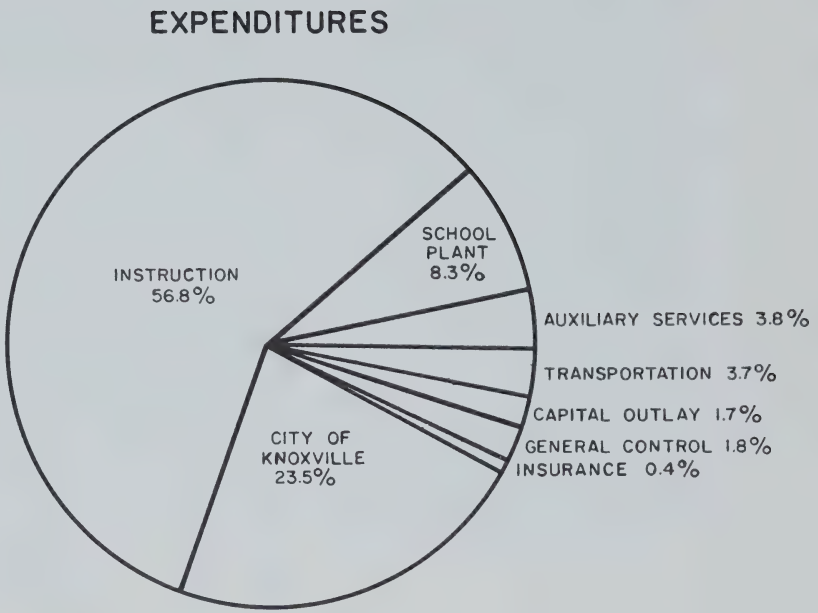
Source: Office of the Knox County Schools.

* Estimated

FIGURE IX

PROPORTIONAL DISTRIBUTION OF BUDGETED RECEIPTS AND EXPENDITURES KNOX COUNTY SCHOOLS 1961 – 1962





Furthermore, financial trends must take into account changes in attendance and the purchasing power of the dollar. Table XXXVI shows a summary of the net revenue receipts available to the Knox County schools in unadjusted dollars and in adjusted dollars. Unadjusted dollars are actual dollars and adjusted dollars are dollars converted into the purchasing power of 1947-49 dollars in accordance with the Consumer Price Index, Department of Commerce, Bureau of Labor Statistics. The following indices were used considering 1947-49 dollars equal to 100: For the year 1950-51 an indes of 107.4; for the year of 1955-56 an index of 114.9; for the year 1960-61 an index of 1927.3 and for 1961-62 an estimated index of 128.5.

Table XXXVI Analysis of Trends in Net Revenue Receipts for Knox County Schools (Excludes Revenue Receipts for Debt Service)

Year	Net Revenue Receipts (Unadjusted dollars)	Net Revenue Receipts (Adjusted Dollars)	Average Daily Attendance	Net Revenue Receipts Per Pupil in Average Daily Attendance (Adjusted Dollars)
1950-51	2,696,194	2,510,523	19,093	131.48
1955-56	5,022,288	4,371,008	23,998	182.14
1960-61	7,665,811	6,021,847	30,092	200.11
1961-62*	8,220,682	6,397,418	31,100	205.70

Percent Increase in Revenue Receipts 1950-51 to 1961-62 (Unadjusted Dollars)	204.9
Percent Increase in Revenue Receipts 1950-51 to 1961-62 (Adjusted Dollars)	154.8
Percent Increase in Average Daily Attendance 1950-51 to 1961-62	62.9
Percent Increase of Revenue Receipts Per Pupil in Average Daily Attendance (Adjusted Dollars)	56.4

* Estimated

When unadjusted dollars only are used, it appears that there has been an increase in revenue receipts of 204.9 per cent. When differences in the purchasing power of the dollar are taken into account, the increase drops to 154.8 per cent. But when increases in school attendance are taken into consideration, the real increase is found to have been only 56.4 per cent. This appears to be a substantial increase, but actually, Knox County has just about kept pace with national trends in increasing school receipts.

Table XXXVII shows sources of income for the County School System. There has been no major change in the proportion of revenue by source since 1950-51. For example, 42.2 per cent of net revenue receipts was obtained from state sources in 1950-51 and 44.8 per cent in 1961-62. County sources furnished 51.7 per cent in 1950-51 and 46.8 per cent in 1961-62. Federal sources have fluctuated some but the percent derived from Federal sources comprised only 2.3 per cent more of the total in 1961-62 than in 1950-51.

Table XXXVII Sources of Net Revenue Receipts of Knox County Schools in Dollars and Percents

	State		County		Federal		
Year	Amount	Percent	Amount	Percent	Amount	Percent	Total
1950-51	1,137,985	42.2	1,392,986	51.7	165,223	6.1	2,696,194
1955-56	2,012,005	40.2	2,302,674	45.8	707,609	14.0	5,022,288
1960-61	3,558,939	46.4	3,528,612	46.0	578,260	7.6	7,665,811
1961-62*	3,685,940	44.8	3,843,407	46.8	691,335	8.4	8,220,682

* Estimated

Current Expenditures

Table XXXVIII shows trends in expenditures of the Knox County schools since 1950-51. However, the data presented in this table need further analysis. Table XXXIX shows the per cent increase for each function of expenditure without taking into consideration decreases in the purchasing power of the dollar or increases in attendance. This table is useful only for showing the

relative increases for each function of expenditure. From Table XXXVIII, most of the increase in current expenditures since 1950-51 has been allocated to instruction. In fact, that function of school expenditure has received the greatest percentage of increase with the exception of two small item expenditures--supervision of school plant and fixed charges. Total current expenditures have increased 222 percent but expenditures for instruction have increased 240 per cent.

Table XL presents trends in total expenditures taking into account changes in the purchasing power of the dollar and increases in attendance. Unadjusted current expenditures increased 222.1 per cent between 1950-51 and 1961-62 but when adjusted for the decreased purchasing power of the dollar, they increased only 169.2 per cent. When consideration is given to increased attendance, the real increase has been only 64.7 per cent.

Table XXXVIII Trends in Expenditures and Certain Other Items for Knox County Schools

Item	1950-51	1955-56	1960-61	1961-62 (Estimated)
General Control	$ 67,193	$ 110,147	$ 173,577	$ 184,440
Instruction	1,724,447	3,052,575	5,563,018	5,869,982
Supervision of School Plant	4,200	11,574	14,182	16,550
Operation	198,961	337,856	519,974	581,700
Maintenance	86,031	182,890	236,649	253,700
Transportation	149,773	237,345	346,815	376,700
Fixed Charges	1,920	28,934	49,207	45,550
Auxiliary Services	165,260	216,607	335,174	393,680
Total Current Expenditures	2,397,785	4,177,928	7,238,596	7,722,302
Capital Outlay	21,291	1,815,778	2,343,562	634,952
Debt Service	114,413	151,456	210,552	210,000
Total of Items 9,10,11	2,533,489	6,145,162	9,792,710	8,567,254
Transfers to Other Systems for Pupils Transferred	16,195	6,862	16,113	16,000
Vocational Evening and Adult Classes	35,999			
GRAND TOTAL EXPENDITURES (Items 12,13, 14)	$ 2,585,683	$6,152,024	$9,808,823	$ 8,583,254

Source: Office of the Knox County Schools

Table XXXIX Percent Increases in Current Expenditures by Function Of Expenditure for Knox County Schools (Adjusted Dollars)

Function	1950-51	1961-62 (Estimated)	Increase	Percent Increase
General Control	67,193	184,440	117,247	174
Instruction	1,724,447	5,869,982	4,145,535	240
Supervision of School Plant	4,200	16,550	12,350	294
Operation	198,961	581,700	382,739	192
Maintenance	86,031	253,700	167,669	195
Transportation	149,773	376,700	226,927	152
Fixed Charges	1,920	45,550	43,630	2,272
Auxiliary Services	165,260	393,680	228,420	138
TOTAL CURRENT EXPENDITURES	2,397,785	7,722,302	5,324,517	222

Table XL Analysis of Trends in Current Expenditures for Knox County Schools

Year	Total Current Expenditures (Unadjusted Dollars)	Total Current Expenditures (Unadjusted Dollars)	Total Current Expenditures Per Pupil in Average Daily Attendance (Adjusted Dollars)
1950-51	2,397,785	2,232,574	116.93
1955-56	4,177,928	3,636,143	151.52
1960-61	7,238,596	5,686,250	188.96
1961-62*	7,722,302	6,009,574	192.64

Percent Increase in Current Expenditures 1950-51 to 1961-62 (Unadjusted Dollars)	221.1
Percent Increase in Current Expenditures 1950-51 to 1961-62 (Adjusted Dollars)	169.2
Percent Increase in Current Expenditures Per Pupil in Average Daily Attendance 1950-51 to 1961-62 (Adjusted Dollars)	64.7

* Estimated

Table XLI shows trends in teachers' salaries since 1950-51. Teachers' salaries increased 69.7 per cent in unadjusted dollars during this eleven year period but increased only 41.8 per cent when differences in the purchasing power of the dollar are considered. It was pointed out above that the real increase in per pupil expenditures was 64.7 per cent which is considerably higher than the real increase in average teachers' salaries. Since instruction costs have increased more than total current expenditures, as shown in Table XXXIX, the small increase in teachers' salaries could be questionable except that the number of instructional personnel relative to the number of pupils has been considerably increased since 1950-51, as shown by teacher-pupil ratios in Part II of this report.

Table XLI Analysis of Trends in Classroom Teachers' Salaries in Knox County Schools

Year	Average Teachers' Salary (Unadjusted Dollars)	Average Teacher's Salary (Adjusted Dollars)
1950-51	2,493	2,321
1955-56	3,184	2,771
1960-61	3,942	3,087
1961-62*	4,230	3,292
Percent Increase in Average Teacher's Salary 1950-51 to 1961-62 (Unadjusted Dollars)		69.7
Percent Increase in Average Teacher's Salary 1950-51 to 1961-62 (Adjusted Dollars)		41.8

* Estimated

Source: Office of the Knox County Schools

Financing Knoxville City Schools

Trends in the revenue receipts and current expenditures of the Knoxville City schools are analyzed in this section.

Revenue Receipts

The receipts of the Knoxville City Schools are shown in Table XLII for selected years beginning with 1950-51 and 1961-62. When allowance is made for differences in the purchasing power of the dollar, the increase is reduced to 47.8 per cent. When the number of children educated is taken into consideration, the real increase has been only 33.6 per cent. This increase has been much less than the per cent increase in the County schools during this eleven year period but the County schools were financed at a far lower level than the City schools in 1950-51.

Table XLIV shows some interesting trends in changes of proportion of revenue from different sources for the City schools. The City school revenue derived from state sources increased from 29.0 per cent in 1950-51 to 36.0 per cent in 1961-62; the revenue derived from County sources increased from 15.7 per cent in 1950-51 to 34.9 per cent in 1961-62 and the per cent derived from City sources decreased from 47.2 per cent in 1950-51 to 23.8 per cent in 1961-62. It is evident that the burden for the support of the City schools is gradually being shifted from the City to the County and the state. This trend is not unusual among cities financed largely from state, county and district funds.

Table XLII Trends in Receipts For Public Schools of City of Knoxville (Excluding Revenue Receipts for Debt Service)

Source	1950-51	1955-56	1960-61	1961-62 (Estimated)
Revenue Receipts				
State	$1,138,113	$2,141,187	$2,509,599	$2,500,000
Federal	259,494	267,865	342,170	325,000
Total received from County	615,174	1,268,598	1,706,424	2,419,000
Total received from City and District	1,866,839	1,567,505	2,055,803	1,653,500
Other Funds	42,871	35,394	52,785	40,000
From other systems (pupil transfers)				
Total Revenue Receipts	3,922,491	5,280,549	6,666,781	6,937,500
Total Non-Revenue Receipts	2,844			
Total Revenue and Non-Revenue Receipts	$3,925,335	$5,280,549	$6,666,781	$6,937,500

Source: Office of the Knoxville City Schools

Table XLIII Analysis of Trends in Net Revenue Receipts for Knoxville City Schools

Year	Net Revenue Receipts (Unadjusted Dollars)	Net Revenue Receipts (Adjusted Dollars)	Average Daily Attendance	Net Revenue Receipts Per Pupil in Average Daily Attendance (Adjusted Dollars)
1950-51	3,922,491	3,652,226	18,171	200.99
1955-56	5,280,549	4,595,778	20,472	224.49
1960-61	6,666,781	5,237,063	19,903	263.13
1961-62*	6,937,500	5,398,833	20,100	268,60

Percent Increase in Revenue Receipts 1950-51 to 1961-62 (Unadjusted Dollars)	76.9
Percent Increase in Revenue Receipts 1950-51 to 1961-62 (Adjusted Dollars)	47.8
Percent Increase in Average Daily Attendance 1950-51 to 1961-62	10.6
Percent Increase in Revenue Receipts Per Pupil in Average Daily Attendance 1950-51 to 1961-62 (Adjusted Dollars)	33.6

* Estimated

Table XLIV Percent of Revenue Receipts of Knoxville City Schools Derived from Each Source

Year	State	Federal	County	City	Other	Total
1950-51	29.0	6.6	15.7	47.6	1.1	100.0
1955-56	40.5	5.1	24.0	29.7	.7	100.0
1960-61	37.7	5.1	25.6	30.8	.8	100.0
1961-62	36.0	4.7	34.9	23.8	..6	100.0

Current Expenditures

Table XLV shows trends in expenditures for the City schools since 1950-51. Increases in current expenditure by function are shown in Table XLVI. This table makes no allowance for the decreased purchasing power of the dollar or changes in attendance. However, it does show the relative rates of increase for each function of expenditure. Expenditures for instruction were increased proportionately more than expenditures for any other function of expenditure.

Table XLVII presents an analysis of trends in current expenditures for the Knoxville City schools, making due allowance for changes in attendance and the purchasing power of the dollar. Unadjusted expenditures increased 80.1 per cent but when allowance is made for decreases in the purchasing power of the dollar, the increase was reduced to 50.5 per cent. When consideration is given to increases in attendance since 1950-51, the real increase per pupil has been only 36.1 per cent. This is a lower rate of increase in expenditure than the County increase but the County expenditure level was relatively low in 1950-51.

Table XLVIII shows trends of teachers' salaries in the City of Knoxville since 1950-51. Teachers' salaries increased 40.5 per cent between 1950-51 and 1961-62 in unadjusted dollars, but when allowance is made for the decreased purchasing power of the dollar, the average teachers' salary has been increased only 17.5 per cent. Stated previously the current expenditure per pupil in average daily attendance increased 36.1 per cent in adjusted dollars since 1950-51, but the relative increase in teachers' salaries has been much less.

Knox County and the City of Knoxville Compared

Some significant comparative data for the two systems are now presented.

Current Expenditures Per Pupil Compared

Table XLIX presents a comparison of Knox County with the City of Knoxville in current expenditures per pupil. Both systems are also compared with the national

Table XLV Trends in Expenditures and Certain Other Items for Knoxville City Schools

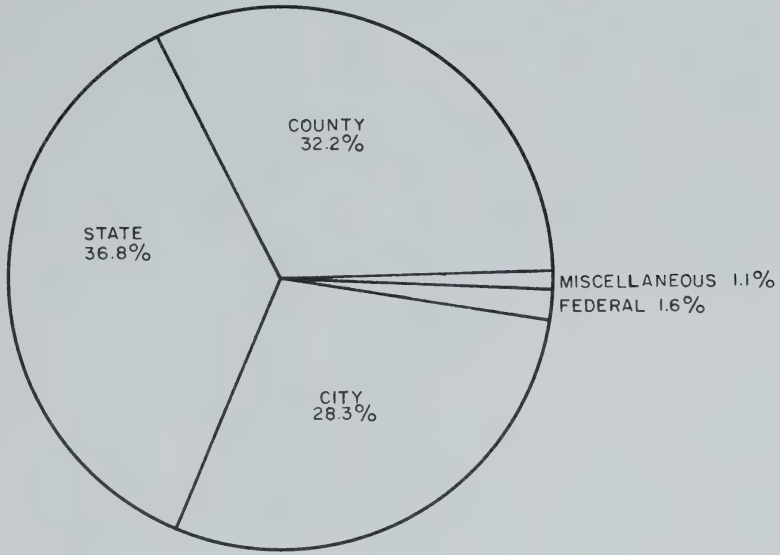
Item	1950-51	1955-56	1960-61	1961-62 (Estimated)
1. General Control	$ 81,806	$ 99,823	$ 120,102	$ 135,000
2. Instruction	$ 2,643,573	$3,864,967	$ 4,948,041	$ 5,135,000
3. Supervision of School Plant	5,300	6,856	7,850	7,500
4. Operation	323,891	447,347	562,585	575,000
5. Maintenance	218,485	261,561	331,878	340,000
6. Transportation				
7. Fixed Charges	99,399	121,546	161,552	166,000
8. Auxiliary Services	308,155	238,277	263,239	270,000
9. Total Current Expenditures	3,680,609	5,040,377	6,395,247	6,628,500
10. Capital Outlay	4,958	156,030	147,155	150,000
11. Debt Service	59,552			
12. Total of Items 9, 10, 11	$ 3,745,119	$ 5,196,407	$6,542,402	$ 6,778,500
13. Transfers to Other School Systems for Pupils Transferred				
14. Vocational Evening and Adult Classes	61,098	79,205	135,797	140,000
15. Grand Total Expenditures (Items 12, 13, 14)	$3,806,217	$ 5,275,612	$6,678,199	$ 6,918,500

Source: Office of the Knoxville City Schools

FIGURE X

PROPORTIONAL DISTRIBUTION OF RECEIPTS AND EXPENDITURES
KNOXVILLE SCHOOLS 1961

RECEIPTS



EXPENDITURES

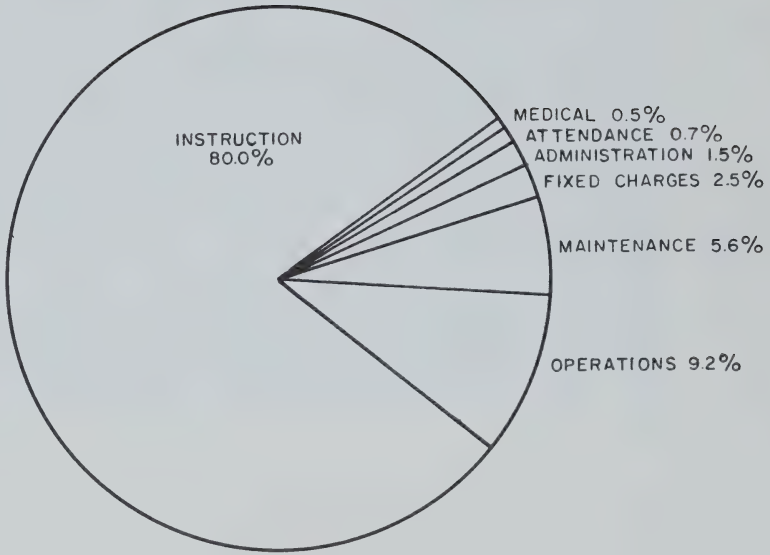


Table XLVI Percent Increase in Current Expenditures by Function of Expenditure for Knoxville City Schools (Unadjusted Dollars)

Function	1950-51	1961-62 (Estimated)	Increase	Percent Increase
General	81,808	135,000	53,192	65
Instruction	2,643,573	5,135,000	2,491,427	94
Supervision of School Plant	5,300	7,500	2,200	42
Operation	323,891	575,000	251,109	78
Maintenance	218,485	340,000	121,515	56
Fixed Charges	99,399	166,000	66,601	67
Auxiliary Services	308,155	270,000	(38,155)	(12)
Total Current Expenditures	3,680,611	6,628,500	2,947,889	80

Table XLVII Analysis of Trends in Current Expenditures for Knoxville City Schools

	Total Current Expenditures (Unadjusted Dollars)	Total Current Expenditures (Adjusted Dollars)	Total Current Expenditures Per Pupil in Average Daily Attendance (Adjusted Dollars)
1950-51	3,680,611	3,427,010	188.60
1955-56	5,040,377	4,386,751	214.28
1960-61	6,385,247	5,023,760	252.41
1961-62*	6,628,500	5,158,365	256.64

Percent Increase in Current Expenditures 1950-51 to 1961-62 (Unadjusted Dollars)	80.1
Percent Increase in Current Expenditures 1950-51 to 1961-62 (Adjusted Dollars)	50.5
Percent Increase in Current Expenditures Per pupil in Average Daily Attendance 1950-51 to 1961-62 (Adjusted Dollars)	36.1

* Estimated

Table XLVIII Analysis of Trends in Classroom Teachers' Salaries in Knoxville City Schools

Year	Average Teachers' Salary (Unadjusted Dollars)	Average Teachers' Salary (Adjusted Dollars)
1950-51	3,700	3,445
1955-56	4,290	3,734
1960-61	5,081	3,991
1961-62*	5,200	4,047
Percent Increase in Average Teacher's Salary 1950-51 to 1961-62 (Unadjusted Dollars)		40.5
Percent Increase in Average Teacher's Salary 1950-51 to 1961-62 (Adjusted Dollars)		17.5

* Estimated

Table XLIX Current Expenditures Per Pupil in Average Daily Attendance (In Unadjusted Dollars)-- Knox County and Knoxville Compared with Each Other and With the United States

Year	Knox County	Knoxville	Percent Knox County of Knoxville	U.S. Average	Percent Knox County of U.S. Average	Percent Knoxville of U.S. Average
1950-51	125.58	202.55	61.9	228.31 (a)	55.0	88.7
1955-56	174.09	246.21	70.7	297.45 (a)	58.5	82.8
1960-61	240.54	321.32	74.9	393.00 (b)	61.2	81.8
1961-62	248.31	329.78	75.3	414.00 (b)	60.0	79.7

(a) U. S. Office of Education

(b) N.E.A. Estimates

Table L Average Classroom Teacher's Salary (Unadjusted Dollars)-- Knox County and Knoxville Compared With Each Other and With the United States

Year	Knox County	Knoxville	Percent Knox County of Knoxville	U.S. Average	Percent Knox County of U.S. Average	Percent Knoxville of U.S. Average
1950-51	2,493	3,700	67.4	3,022 (a)	82.5	122.4
1955-56	3,184	4,290	74.2	4,019 (a)	79.2	106.7
1960-61	3,942	5,081	77.6	5,275 (b)	74.7	96.3
1961-62	4,230	5,200	81.3	5,527 (b)	76.5	94.1

(a) U.S. Office of Education data for salaries of instructional staff adjusted to approximate salaries of classroom teachers.

(b) N. E. A. Estimates

average for this item. The current expenditure per pupil in the County System was 61.9 per cent of the expenditure per pupil in the City System in 1950-51 and 75.3 per cent in 1961-62. The State Foundation Program of School financing and the increase in the County-wide levy have tended to reduce the inequalities between the two systems but great inequalities still exist.

Current expenditure per pupil in the County System was 55.0 per cent of the national average in 1950-51 and 60.0 per cent in 1961-62. The County System is making slow progress in reaching the national average current expenditure level but the change is upward.

On the other hand the current expenditure per pupil in the City of Knoxville was 88.7 per cent of the U. S. Average in 1950-51 and only 79.7 per cent in 1961-62. Thus, the rate of increase in school financing in the City of Knoxville is not as great as the national rate of increase.

Teachers' Salaries Compared

Table L shows that the average teacher's salary in Knox County was 67.4 per cent of the Knoxville City average in 1950-51 and 81.3 per cent in 1961-62. This represents considerable progress toward equalization with the City. However, the picture is not so bright when Knox County is compared with the national average. The average teacher's salary in Knox County was 82.5 per cent of the U. S. average in 1950-51 and only 76.5 per cent in 1961-62. For the City of Knoxville, the comparative status in 1950-51 and 1961-62 is still more unfavorable. In 1950-51 the average teacher's salary in the City of Knoxville was 122.4 per cent of the national average and in 1961-62 it was only 94.1 per cent of the national average. It is evident that both Knox County and the City of Knoxville are not increasing teachers' salaries as fast as the national rate of increase.

Revenue Receipts Per Pupil Compared

Table LI shows a comparison of trends in revenue receipts per pupil in unadjusted dollars. The revenue receipts per pupil in Knox County in 1950-51 amounted to 54.0 percent of the national average and in 1961-62 to 54.8 per cent of the national average. Thus, Knox County has increased revenue receipts per pupil over the past eleven-year period at approximately the national rate of increase.

Table LI Revenue Receipts Per Pupil In Average Daily Attendance (Unadjusted Dollars)-- Knox County and Knoxville Compared With the United States Average

Year	Knox County	Knoxville	U. S. Average	Percent Knox County of U. S. Average	Percent Knoxville of U.S. Average
1950-51	141.21	215.87	261.43	54.0	82.6
1955-56	209.28	257.94	349.19	59.9	73.9
1960-61	254.75	334.96	458.34	55.6	73.1
1961-62	264.33	345.15	482.26	54.8	71.6

Table LII Revenue Receipts Per Pupil In Average Daily Attendance, 1961-1962, Knox County And The City of Knoxville Combined (Unadjusted Dollars)

Item	Knox County	Knoxville	Total
Revenue Receipts	8,220,682	6,937,500	15,158,182
Average Daily Attendance	31,100	20,100	51,200
Revenue Receipts Per Pupil	264.33	345.15	296.16

In the City of Knoxville, revenue receipts amounted to 82.6 per cent of the national average in 1950-51 and 71.6 per cent in 1961-62. Hence, revenue receipts per pupil in the City of Knoxville have not increased as much as the national rate of increase.

Effort in Relation to Ability

It is difficult to present an accurate measure of financial effort to support schools in relation to taxpaying ability for each school system separately because of the intermingling of the finances of the two systems, but a measure of effort can be calculated if the statistics of the two systems are combined. Table LII shows that revenue receipts per pupil in average daily attendance for the two systems combined in 1961-62 was $296.06. This sum was 61.4 per cent of the national average of $482.26 of revenue receipts per pupil.

The per capita Effective Buying Income of Knox County, including the City of Knoxville, was $1,602 in 1960 while the national average was $1,974 per capita.[3] Effective Buying Income is similar to the U. S. Department of Commerce measure called Disposable Income. The per capita Effective Buying Income of Knox County in 1960 was 81.1 per cent of the national average. Therefore, it is reasonable to assume that the revenue receipts per pupil for the Knox County and Knoxville City schools combined should approximate 81.1 per cent of the national average if the County and the state of Tennessee make an average effort in proportion to ability. This would be $391.11 of revenue receipts per pupil. If that amount of money per pupil had been available in 1961-62, the revenue receipts of the two systems combined would have totalled $20,024,832 in 1961-62. This amount would have been $4,866,650 more than was available. Actually, the prevailing trend in the United States if for the states with a low per capita income to spend a higher per cent of their income for the public schools than states with a high per capita income.

It could well be argued that from this amount should be deducted the debt service payments made by the County and City from monies not included in the receipts reported in Table XLVIII. Those debt service payments were as follows:

1. The Quarterly County Court--Debt service on County-wide bonds for schools $484,000

2. The Quarterly County Court--Debt service on rural school bonds less that part of the debt service paid from the state capital outlay allotment ($631,088-$210,000) $421,088

3. The Knoxville City Council--Debt service on bonds issued for school purposes less that paid from state capital outlay allotment ($942,441-147,155) $795,286

Total $1,700,374

If $1,700,374 is deducted from $4,866,650, the deficit in average effort in relation to ability would have been $3,166,276. Attention is directed to the fact, however, that revenue receipts for debt service on school bonds paid by a governmental agency other than the board of education are frequently not reported to the U. S. Office of Education. Therefore, the national figure of revenue receipts per pupil does not include revenue receipts for debt service for many school systems in the United States.

It is not suggested that all of this additional amount of $3,166,276 should be raised by the people of Knox County from increases in property taxes. But it is suggested that an increase in school revenue of this amount from a combination of State and County sources could be made without the County making more than an average tax effort in proportion to taxpaying ability.

How much additional revenue would have been required in 1961-62 in order to provide as much revenue per pupil in the County schools as in the City schools? Table LII shows that the revenue receipts per pupil in the Knoxville City schools amounted to $345.15 per pupil. This amount multiplied by 51,200 pupils in average daily attendance for the two systems combined gives a product of $17,671,680. The amount actually provided for the two

systems combined was $15,158,182. The difference is $2,513,498 which represents the amount of additional revenue needed in order to have brought the financing level of the County schools up to the City level in 1961-62. This is less than the additional $3,166,276 needed to bring the financial effort of the two systems combined up to average financial effort in relation to taxpaying ability.

Some Financial Problems

Knox County and the City of Knoxville have been faced with a number of financial problems prior to annexation. The annexation of the new territory will not only intensify some existing problems of school financing, but it will bring on some new ones.

Changes in Assessments and Attendance

The County assessment for the old City area for 1961 was $151,764,947 and for the remainder of the County $109,867,000. It is estimated that the County assessment of the annexed area was $67,139,600 in 1961. Therefore, the County assessment of the future City area would, at the old rate of county assessment, be approximately $218,904,547 and the County outside of the City approximately $42,727,400. This would not work particularly to the disadvantage of the County schools, however, because the local taxes for the County schools are provided from County-wide taxes. It is understood that property is being reappraised in the County and, therefore, the above estimates will probably need to be adjusted in the future.

The City assessment for Knoxville was $239,618,755 for the old City in 1961. It is estimated that the City assessment for the annexed territory will be $100,709,000 making a total assessment for the future City of $340,328,155.

The average daily attendance in the old City limits was approximately 20,100 in 1961-62 and the total average daily attendance in the new City limits would be approximately 38,800. The average daily attendance in

the County would be reduced from 31,100 to 13,400 using 1961-62 attendance data.

The assessed valuation per pupil in average daily attendance in the old City limits was approximately $11,921 and in the future City limits it will be approximately $8,771. Evidently the City will have to increase its tax rate or obtain additional revenue from other sources or both, if the same quality of education is provided in the annexed territory as in the old City.

Financing Building Needs

Under the laws of Tennessee, when general county obligation bonds for schools are issued by the Quarterly County Court, the proceeds of the bonds issued must be divided with the city in proportion to average daily attendance unless the city relinquishes all or a part of its claim. The cities of Tennessee, and Knoxville is no exception, have been loath to relinquist their claims on such bond issues. Most of the recent growth in Knox County has taken place in suburban areas outside of the limits of the City of Knoxville. Where the population growth occurs is where school buildings are needed. Heretofore there has been a much greater building need relatively in the County than in the City. The County has in the past issued rural school bonds totalling $10,780,000 and pledged for their retirement the proceeds of the state capital outlay allotment, the County beer tax, the amusement tax, and the alcoholic beverage tax. On June 30, 1961 some $8,295,000 of these bonds and notes were still outstanding. However, this has only partly solved the problem.

It is possible that the school building problems of the County may be partly solved with the annexation of much of the growing territory of the City. However, there are growing areas in the County territory not annexed and as the City grows, this situation will become more acute. As long as the County operates with a County School System and a City School System, the present available methods for financing school buildings will be unsatisfactory.

The distribution of the proceeds of County-wide school bond issues between a county and a city system in proportion to average daily attendance is based on the assumptions that both systems at a given time have the

same building need in proportion to average daily attendance and that each system in the future will grow at exactly the same rate. These assumptions have not been true in the past for any situation in Tennessee.

Teacher Retirement

Most of the teachers in the old City of Knoxville are in the City Retirement System while the teachers in the territory to be annexed are under the Tennessee Teachers' Retirement System. Teachers under the City System may retire at 50 years of age at one-half of their average pay for the three highest years of service after teaching for 25 years. This fact alone should not form the basis for concluding that the City System is better than the State System. Actuaries have raised some questions concerning the actuarial soundness of the City System. The City System, however, has been paying the retired teachers of the City of Knoxville the benefits promised. But the City Retirement System could not possibly meet its obligations to retire teachers if all teachers retired promptly on attaining 50 years of age. Most teachers continue to teach after 50 years of age and continue to contribute to the system although their retirement benefits cannot exceed 50 per cent of the average salary for the three highest years of service. City teachers contribute four per cent of their salaries to the system and the state five per cent, and the City Council pays the balance of the amount necessary to provide the benefits promised.

Obviously, the City teachers who desire to be continued in the City Retirement System must have the right to do so. To do otherwise would be a violation of contractual obligations. Following are two alternatives which might be considered.

1. Continue the Knoxville City teachers in the City System and permit the teachers in the annexed territory to join the system by paying the amounts due for past service.

2. Continue the Knoxville City teachers now in the City Retirement System in

that system if they elect to be continued, but have all newly employed teachers in both the old City and the annexed territory join the State System.

Actually, the virtues of the retirement system for City teachers are somewhat overrated. A good retirement system should be actuarially sound and it should provide adequate retirement and survivor's benefits. A retirement system with adequate benefits which is actuarially sound cannot be provided on the rates of contribution for the City Retirement System.

If it is decided to admit teachers in the annexed territory and all additional teachers employed into the City Retirement System, the City System should be carefully studied by competent actuaries and revised in accordance with sound public and financial policies. It is particularly important that the normal retirement age be raised from 50 years of age to 60, or 62. If an improved system is adopted, teachers now in the City System should be given the option of continuing in the old system or joining the new system upon paying the extra contribution required for past years of service in order to share in the additional benefits provided.

Ownership of Buildings and Bonds Outstanding in the Annexed Territory

There are 29 schools in the territory to be annexed. The County owns the plants for these schools. In 1960 it was estimated[4] that there were $2,974,657 in rural bonds outstanding for schools constructed in the territory for which plans were being made for annexation. However, the territory actually annexed did not include two schools originally contemplated. The bonds outstanding for these two schools totalled $171,830. Therefore, the rural bonds outstanding in the territory actually annexed totalled $2,802,827. This does not include $2,265,000 in unfunded notes outstanding, the proceeds of which were used to finance rural schools, a number of which are located in the territory to be annexed.

When an independent city system is located within a county system, inevitably there arise many problems with respect to what school a particular child will attend when that child lives near the boundary of the city system. Maximum efficiency requires that a child be permitted to attend the school of his grade level nearest to his place of residence. But the taxpayers of the City school system pay higher taxes for schools than taxpayers of the County school system. Consequently, the City charged a tuition of $109 per pupil in 1961-62 for County children attending City schools. This situation will undoubtedly prevail after annexation.

But, annexation did not reduce the problem of County children living nearer City schools than to County schools. It increased the problem because it increased the perimeter of the City. For this reason, the County may be compelled to construct some additional buildings to house children living in the county system who have been attending schools in the annexed territory but they do not live in the annexed territory. It is estimated that this involved more than 2,300 pupils. Obviously, these children cannot be expected to pay a tuition fee of $109. For these reasons the County may not be willing to relinquish its buildings in the annexed territory to the City unless some means are provided to the County for financing additional building needs of the County created by annexation.

In the case of Hamilton County v. City of Chattanooga, 203 Tenn. 85, 310 S. W. 2d 163, the Court states "The sole question in this case is whether..... counties are included within the phrase ' any affected instrumentality of the state of Tennessee.'" The Court decided this question in the affirmative. The effect of this decision was to make the provision of Chapter 113, Public Acts, 1955 applicable. This act requires that the annexing city acquiring property from "any affected instrumentality of the state" make an adjustment with that instrumentality "as reason and justice may require in the circumstances." If an agreement cannot be reached between the two governing bodies concerned, provision is made for settlement by arbitration and the arbitration award can be appealed to the courts.

The question of ownership of a school building in annexed territory is now under litigation in another county in Tennessee. It is evident that all of the legal points involved in a city acquiring ownership of schools in annexed territory have not been finally settled.

Duplicate Central Services

At present each system maintains a central office with a superintendent, supervisor, secretaries, clerks and other central office personnel. Each system maintains one or more warehouses and a school plant maintenance shop with delivery trucks.

It is not suggested that the central service of either system are overstaffed. Neither is it suggested that certain economies of size of operation might result from consolidation. The economies would be in the form of more efficient service resulting from the opportunity to provide for more specialization of personnel. Part of the additional specialized personnel could be obtained from the elimination of certain duplications of services. For example, a single school plant maintenance shop for the two systems could provide for more specialization of personnel within the same total number now employed by both systems.

The central office, one warehouse and school plant maintenance services of the City System are housed in an abandoned school building. This building was not designed for the purposes for which it is now being used. The warehouse is very inefficiently arranged for receiving, storing and delivering of goods. The parking space provided for the employees of the board and for the general public is very inadequate. It is possible that this facility could be used more efficiently for an adult education center than for the central facilities of the City Board of Education. The City Board of Education also operates a warehouse at another location in an abandoned school building.

The central offices for the County School System are housed in a structure which is most inadequate. Very little parking space is provided. The warehouse and school plant maintenance facilities are not adequate. The County has invested but very little in the facilities for its central staff.

Since both systems need new central facilities, it would be more economical to construct new facilities for a consolidated school system on an adequate site than to construct new facilities for each school system on separate sites.

Inequality of Educational Opportunity

A broader level of educational services is now being provided for the children attending school in the City System than in the County System. Annexation should offer a broader level of educational services for the approximately 18,000 children living in the annexed territory but it would still leave approximately 13,000 County children with educational opportunities either inferior to the opportunities available to the children in the City schools.

All of the problems discussed in this section of the report are related to equalization of educational opportunity. These problems cannot be solved with maximum fiscal efficiency as long as separate school systems are maintained in the County. If it is assumed that equivalent educational opportunity should be provided throughout the County, financial arrangements for attaining this goal can be made much more readily and economically by consolidation of the two systems than by maintaining separate systems.

Projections of the Revenue Receipts for the Public Schools of Knox County and Knoxville in 1975-76

It is not possible to make accurate projections of the revenue receipts of a school system 14 years in advance. Projections of this type are affected by such factors as population growth, economic growth and change, variations in the purchasing power of the dollar, change in the consumer demand for education and other factors. It is impossible to make accurate predictions for each of these factors and then to assess the effect of each change on school costs. Despite these difficulties, it is of some value to make long-range projections of school revenue needs. In order to simplify this task, all projections are presented for the County and the City systems combined. In

the following paragraphs, certain assumptions are stated and projections are presented, based on those assumptions.

National Trends in School Revenue

In Table LIII trends in school revenue for the nation from 1950-51 to 1961-62 are presented. The average annual increase per pupil in revenue receipts for the nation during the past eleven years has been $20.08 and the median increase $20.37. Therefore, it is assumed that the national rate of increase in revenue receipts will be $20 per pupil between 1961-62 and 1975-76.

The revenue receipts per pupil in average daily attendance totalled $486.26 in 1961-62. Assuming that revenue receipts will increase $20 per pupil annually during the next fourteen years, the revenue receipts per pupil in A.D.A. for the nation in 1975-76 would be $762.26 in terms of 1975-76 dollars.

It is assumed that the Consumer Price Index will increase 1.5 points per year during the next fourteen years. If that assumption is correct, the Consumer Price Index will be 149.4 in 1975-76 as compared with 128.5 in 1961-62. Using this estimated index the revenue receipts per pupil in average daily attendance for the nation will be $654 in terms of the purchasing power of the 1961-62 dollar.

Projections for Knox County Including the City of Knoxville

Following are some assumptions on school attendance and population and some projections pertaining to income and school receipts: It is estimated that the total school enrollment will be 66,949 in 1975-76, and the average daily attendance will be 60,522.

The United States Bureau of the Census reported a total population of 250,523 in Knox County in 1960. The projected population in Knox County is 307,000 for 1975.

1. Projected disposable income. The total disposable income (effective buying income) of Knox County was estimated to be $403,877,000 in 1960 by Sales Management. The per capita

Table LIII Revenue Receipts Per Pupil In Average Daily Attendance In United States 1950-1951 through 1961-1962

Year	Revenue Receipts (c)	Average Daily Attendance	Revenue Receipts Per Pupil In A.D.A.	Increase Over Previous Year
1950-51	$ 5,946,828,000 (a)	22,747,000 (a)	$ 261.43	
1951-52	6,423,816,000 (a)	23,257,000 (a)	276.21	$ 14.78
1952-53	7,145,334,000 (a)	24,450,436 (a)	292.24	16.03
1953-54	7,866,852,000 (a)	25,643,871 (a)	306.77	14.53
1954-55	8,776,764,500 (a)	26,692,010 (a)	328.82	22.05
1955-56	9,686,677,000 (a)	27,740,149 (a)	349.19	20.37
1956-57	10,934,095,000 (a)	28,870,896 (a)	378.72	29.53
1957-58	12,181,513,000 (a)	29,722,275 (a)	409.84	31.12
1958-59	12,423,756,000 (b)	31,041,585 (a)	400.23	— 9.61
1959-60	13,472,194,000 (a)	32,282,446 (a)	417.32	17.09
1960-61	15,320,340,000 (b)	33,425,470 (b)	458.34	41.02
1961-62	16,646,781,000 (b)	34,518,190 (b)	482.26	23.92
			Average	20.08
			Median	20.37

(a) U. S. Office of Education, "Trends in Financing the Public Schools," Cir. No. 666, 1961.
(b) Estimated by National Education Association
(c) These data include Federal funds for the public schools

disposable income was estimated to be $1,602 in 1960. It is estimated that the per capita disposable personal income in Knox County will be $2,475 in 1975-76 in 1975-76 prices. This figure multiplied by the estimated total population of 307,000 gives a projected total disposable personal income of $759,825,000 in 1975.

2. Projected Revenue Receipts for the Public Schools in 1975-76. Two projections of school revenues for 1975-76 are presented. One of these projections is termed "the most probable estimate" and the other "the optimistic estimate."

   The most probable estimate is based on the assumption that Knox County will provide its public school pupils with revenue receipts equal to 61.4 percent of the national average in 1975-76. That was the per cent provided in 1961-62 and there has been no trend to increase that percentage. That is why this estimate is called the most probable estimate.

   The optimistic estimate is based on the assumption that the per capita disposable income in Knox County will be 81.1 per cent of the national average in 1975 and that per pupil revenue receipts equal to 81.1 per cent of the national average will be provided in 1975-76. It is assumed that the growth in per capita personal income in Knox County will keep pace with national growth but will be no higher per cent of the national average than it was in 1960.

   The most probable estimate was calculated as follows:

   a. The projected national average of $762.26 in 1975 dollars multiplied by 61.4 per cent gives $468.03 of projected revenue receipts per pupil in Knox County in terms of 1975-76 prices. This would be equivalent to $401.80 per pupil in terms of the purchasing power of 1961-62 dollars.

b. The projected average daily attendance of 60,522 multiplied by $468.03 per pupil produces projected revenue receipts of $28,326,112 in 1975-76 in 1975-76 prices. This would be equivalent to $24,317,739 in terms of the purchasing power of the 1961-62 dollar.

The optimistic estimate was calculated as follows:

a. The project national average of $762.26 per pupil multiplied by 81.1 per cent gives projected revenue receipts of Knox County of $618.19 per pupil in A.D.A. in terms of the purchasing power of 1975-76 dollars. This would be equivalent to $530.72 in 1961-62 prices.

b. The projected average daily attendance of 60,522 produces a projected total school revenue in Knox County of $37,414,095 in 1975-76 prices. This would be equivalent of $32,120,236 in terms of the purchasing power of 1961-62 dollars.

3. Projected Effort in Relation to Ability.

a. The total school revenue receipts of Knox County for 1960-61 amounting to $14,887,463 divided by the total disposable income of $403,877,000 reveals that school revenue was 3.69 per cent of disposable income in 1960-61.

b. The most probable estimate of $28,326,112 of school revenue in 1975-76 divided by the projected disposable income of $759,825,000 in 1975 indicates school revenue receipts would equal 3.73 per cent of disposable income in 1975-76.

c. The optimistic estimate of school revenue of $37,414,095 divided by the projected disposable income of $759,825,000 in

1975 forecasts that school revenue would be 4.92 percent of disposable income in 1975-76. Expenditures of up to five per cent of disposable income are commonly accepted.

Summary of Findings

The principal responsibility of the Knox County Quarterly Court is making financial decisions on public education. The general government in Knox County for the most part is administered by the Board of Commissioners. Approximately 72.6 per cent of the total budget of the Knox County Quarterly Court for 1961-62 was allocated for the public schools of Knox County and the City of Knoxville. The Knox County Board of Education is fiscally dependent on the Knox County Quarterly Court. Furthermore, the Knoxville City Board of Education is in part fiscally dependent on the Knox County Quarterly Court because the Court sets County-wide operation and maintenance levies and authorizes County-wide bond issues shared in by both systems.

The Knoxville City Council operates the general functions of City government, exercises fiscal control over the public schools of the City of Knoxville by approving the City school budget, levies City property taxes and other taxes shared in by the schools, and issue bonds including school bonds. Approximately 47 per cent of the total budget of the City of Knoxville is for public schools.

The financial report of the County Court for the fiscal year ending June 30, 1961 showed that bonds and notes outstanding totaled $15,860,000 on June 30, 1961. This amount was itemized as follows: County-wide school bonds - $6,140,000; rural school bonds and notes - $8,294,000; other County indebtedness - $1,426,000.

The total indebtedness of the City of Knoxville on December 31, 1961 was $33,105,000. A little more than one-third of this indebtedness was for the schools.

The proceeds of County-wide bond issues, the debt service on which is paid for by property taxes, are allocated between the two systems on the basis of average daily attendance. This method of allocating the proceeds of bond issues

has but little relationship to capital outlay need because it assumes that the growth in attendance is exactly the same rate in both systems. This assumption has been invalid in the past and will probably be invalid in the future.

County-wide school operation and maintenance levies, with the exception of the levies for transportation, are shared by the County and City school systems in proportion to average daily attendance. This method of allocation of local revenue does not provide adequately for the differences in educational need of the two systems.

Estimates of property assessment in Knox County range from 25 per cent to about one-third of market value. Using the 25 per cent estimate, County taxes are equivalent to only .89 of one per cent of market value of property. Applying a one-third estimate, the tax rate is equivalent to 1.18 per cent of the market value of property. Using either estimate, the County property tax rate is relatively low as compared with many sections of the United States.

The City assessor assesses property at approximately 45 per cent of the market value. The taxpayers of the City of Knoxville pay County taxes as well as City taxes. The present City tax rate of $3.10 is equivalent to $1.40 on property assessed at market value. To this amount must be added the County tax rate of $.89 or $1.18 on the market value of property depending upon what estimate is used for the per cent of market value property is assessed in the County. Therefore, the total tax rate in 1961 in the City of Knoxville ranged from $2.29 to $2.58 per $100 of market value of property. While this is not yet an excessive tax rate, it is approaching one.

The total revenue receipts of the Knox County schools increased 204.9 per cent in current dollars between 1950-51 and 1961-62. However, when current dollars are converted into adjusted dollars and increases in average daily attendance are taken into consideration, revenue receipts per pupil in average daily attendance in dollars of the same purchasing power increased 56.4 per cent between 1950-51 and 1961-62.

The total revenue receipts of the Knoxville City schools increased 76.9 per cent between 1950-51 and 1961-62 but when consideration was given to differences in the purchasing power of the dollar and increases in average daily attendance, the revenue receipts per pupil in average daily attendance expressed in dollars of the same purchasing power increased 33.6 per cent between 1950-51 and 1961-62.

Revenue receipts per pupil of the Knox County and the Knoxville City schools combined were equivalent to 61.4 per cent of the national average in 1960-61 whereas the per capita disposable income of the County was equal to 81.1 per cent of the national average for 1960. This indicates that the people of Knox County are not making as high a tax effort to support their schools in proportion to taxpaying ability as the average for the nation.

Current expenditures per pupil in average daily attendance in the Knox County schools equaled 55 per cent of the national average in 1950-51 and 60 per cent in 1961-62. This was a very slight relative gain over an eleven-year period.

Current expenditures per pupil in the Knox County schools equaled 61.9 per cent of the expenditure per pupil in the City of Knoxville in 1950-51 and 75.3 per cent in 1961-62. Therefore, there was a marked trend toward equalization between the two school systems during this eleven-year period.

Salaries of Knox County teachers increased 69.7 per cent between 1950-51 and 1961-62, but salaries increased only 41.8 per cent when consideration was given to the increased purchasing power of the dollar.

The average classroom teacher's salary in the City increased 40.5 per cent between 1950-51 and 1961-62. However, when consideration is given to the increased purchasing power of the dollar, the increase was 17.5 per cent during this period.

The average teacher's salary in Knox County was 82.5 per cent of the national average in 1950-51 and 76.5 per cent in 1961-62. The average teacher's salary of the City of Knoxville was 122.4 per cent of the national average in 1950-51 and 94.1 per cent in 1961-62. Therefore, both systems declined in relation to the national average of teachers' salaries during this eleven-year period.

It is estimated that the revenue receipts for the public schools of Knox County and the City of Knoxville will total from $28,326,112 to $37,414,095 by 1975-76 in terms of the purchasing power of the 1975 dollars. It is estimated that the disposable income of the people in Knox County will increase from $403,877,000 in 1960 to $759,825,000 in 1975. It is estimated that total state and local taxes for the support of schools in Knox County will increase from 3.69 percent of disposable income in 1960-61 to a per cent between 3.73 and 4.92.

A plan for the efficient financing of the public schools of Knox County is difficult under the present structure of the two systems and the operational procedures employed.

Recommendations

Financial recommendations must take into consideration at least the following factors:

1. Provision for the payment of the County school building rural school debt incurred in behalf of the annexed territory.

2. Provision for compensating the county for the buildings erected in the annexed territory from County funds.

3. Provision of needed educational services and facilities in both the Knox County and City of Knoxville school systems without needless waste and inefficiency.

4. Provision for equitable and adequate educational opportunities for the children in both systems.

Recommendations must also be based on certain assumptions with respect to the goals of the people of the county. Those assumptions are as follows:

1. That an adjustment will be made between the City and the County school systems in relation to the rural school debt and the County funds invested in the buildings in the annexed territory as reason and justice may require in the circumstances.

2. Provision for compensating the county for the buildings erected in the annexed territory from County funds.

3. Provision of needed educational services and facilities in both the Knox County and City of Knoxville school systems without needless waste and inefficiency.

4. Provision for equitable and adequate educational opportunities for the children in both systems.

Recommendations must also be based on certain assumptions with respect to the goals of the people of the County. Those assumptions are as follows:

1. That an adjustment will be made between the City and the County school systems in relation to the rural school debt and the County funds invested in the buildings in the annexed territory as reason and justice may require in the circumstances.

2. That the taxpayers want efficient and economical administration and financing of their schools.

3. That the taxpayers want adequate and equal educational opportunities for all of the children living within the borders of Knox County.

Fiscal recommendations, consistent with the foregoing assumptions, must be directly related to organizational structure and operational procedures.

Discontinuance of Present, Minimally Cooperative Two-System Plan

The evidence and findings revealed by the study mitigate against a recommendation for the continuance of financing schools by separate County and City systems with a minimum of cooperation, as at present. To make such a recommendation, though perhaps the easiest one, would require not only a disregard for current conditions but also for the assumptions stated earlier.

It would mean, more specifically, the continuance of pupils living in the County outside the City attending County schools and children living within the City limits attending City schools. Duplication of all central services and duplication of special educational programs would prevail and be a continuous cause of waste in public expenditures. The plan would be needlessly wasteful and inefficient especially after annexation of new territory is completed by the City. For example, some 2,300 pupils now attending school in buildings within the annexation territory will live outside the new City boundaries. If there were no transfer of pupils between the two systems, the County would be compelled to construct new buildings at a cost of approximately $2,300,000 to house these pupils, leaving additional space in the City system.

Moreover, this plan would not provide adequate and equal educational opportunities for all children of the County. This plan has not done so in the past and there is no prospect that it would do so in the future.

For these reasons, no sound financial proposals can be presented for the present plan. Accordingly, it is recommended that the present plan of financing schools in the metropolitan area by the two separate systems be discontinued and that a more plausible and economical plan be adopted. Two alternative plans are available and are proposed.

Plan I

Unification of the two systems is recommended. This alternative meets all of the requirements of the assumptions stated previously. Provision can readily be

made for the rural school debt and there would be no problem with respect to the City acquiring school buildings in the annexed territory. It would make it possible for pupils to attend the most accessible school. All present available school plant capacity could be utilized and the construction of unneeded buildings would be avoided. It would also eliminate the provision of duplicating central services. Finally, equal educational opportunities could be provided for all the children in the County.

Assuming unification of the two systems, following are the fiscal recommendations to implement this plan:

Consolidation of County and City Debt for Schools

Elsewhere in this report, it has been pointed out that the County has outstanding a school debt in the form of rural school bonds and notes, excluding general school bonds and notes, which totals approximately $8,294,000 and that the City of Knoxville has bonds outstanding issued for school buildings in the amount of approximately $11,733,000. This school debt of approximately $20,027,000 should be consolidated and assumed by the County. The County has been paying the debt service on rural school bonds from the state capital outlay allotment, the County beer tax, the County amusement tax and the alcoholic beverage tax. Therefore, it is recommended that the debt service on the consolidated debt be paid from the County and City state capital outlay allotment, the County and City beer tax, the County and City amusement tax, the County and City alcoholic beverage taxes. These sources should provide for the debt service on all of the consolidated debt.

Table LIV Estimated Yield of Revenue by Sources for Knoxville City and Knox County, 1961-62

Source	County	City	Total
Beer tax	$ 185,000	$ 406,000	$ 591,000
Amusement tax	5,588	50,000	55,588
Alcoholic beverage	96,000	360,000	456,000
State Capital Outlay	210,000	148,000	358,000
Total	$ 496,588	$ 964,000	$1,460,588

If the consolidated debt were to be scheduled to mature serially over a period of twenty years, the annual debt service would be approximately $1,409,100. (The present Knox County School debt matures within the next 13 years, the present Knoxville school debt matures within 23 years)

If the consolidated debt were to be scheduled to mature serially over a period of twenty years, the annual debt service would be approximately $1,409,100. (The present Knox County Schooldebt matures within the next 13 years, the present Knoxville school debt matures within 23 years.) The revenue from the above named sources will increase in the future. Therefore, these sources should be more than adequate to retire the consolidated debt.

The consolidation of the County and City debt for schools is justified on the following reasons:

1. It is desirable to provide some local financial support for the public schools from sources other than property taxes if such sources are available.

2. The above named revenue sources are either obtained from all of the taxpayers of the County or the state, therefore, it is equitable to consolidate these sources into a capital outlay and debt service fund for the entire County.

3. The beer tax and the amusement tax although allocated separately to the County and the City are paid by all of the people of the County.

4. The specific alcoholic beverage revenue received by the County is not shared with the City but it is derived from all of the taxpayers of the County and the state. The specific alcoholic beverage revenue received by the City is not available to the County because liquor stores must by state law be located within the incorporated area of the City but this revenue is actually obtained from all of the taxpayers of the County and surrounding territory.

5. The state capital outlay allotment is derived from the same sources by both the County and the City.

General Obligation School Bonds

The debt service on the general obligation bonds previously issued by the County to finance school buildings in both the County and City systems should continue to be paid from County-wide property taxes. The principal of these bonds outstanding amounts to approximately $6,140,000.

Financing School Buildings in the Future

In the future all school buildings should be financed from either current revenue or County-wide bond issues. The County and City state capital outlay allotment, the beer tax, the amusement tax, and the alcoholic beverage taxes should be deposited in a capital outlay and debt service fund to be used for debt service on bond issues for schools or current capital outlay. If this fund is not sufficient to finance school plant needs, the remainder should be provided from County-wide bond issues serviced by property taxes and/or current property tax levies.

School plant needs should be determined by surveys made at least once every five years. The board should employ competent experts to assist in making these surveys.

Operation and Maintenance Taxes

All taxes for schools should be County-wide. The City of Knoxville should discontinue all tax levies for schools. This will involve an amendment of the City Charter which now requires a minimum levy of $.50 for schools. Evidence is presented elsewhere in this report showing that the people of the County have the financial ability not only to bring the level of educational opportunity of the entire County up to the level now provided in the City of Knoxville but to exceed it.

The unification of the two systems into a single system for financing the schools would undoubtedly encounter some difficulties. Long-standing allegiances to each of the two present systems by various individuals

and groups will probably emerge more strongly. Existing legal provisions will need to be changed and others enacted. New kinds of cooperative effort will be demanded. And some time will be required.

Plan II

This plan, admittedly, is neither as efficient fiscally or educationally as Plan I. It is much more complicated and cumbersome, but it does have some possibilities if certain fiscal and operational procedures are followed.

Pupil Attendance

Pupils should be permitted to attend the most accessible school without the payment of tuition. This will involve continuous cooperation of the two Boards of Education.

Rural School Debt and Acquisition of School Buildings in the Annexed Territory

Data presented by County officials show that since 1947 the County has spent $6,217,565 for schools in the annexed territory from funds obtained from rural school bonds and notes and other revenue derived from the County territory outside of the City. It might be argued that these buildings have depreciated to some extent but it can be argued also that the buildings constructed between 1947 and the early 1950's have appreciated more than they depreciated. It would seem that "reason and justice under the circumstances" would require that the City recompense the County for these buildings. One way to accomplish this is for the City to assume the debt service on $6,217,000 of rural bonds. However, another way is available.

The County has outstanding an indebtedness of $8,294,000 in rural school bonds and notes. The debt service on this indebtedness could be paid from the following sources:

1. The County and the City state capital outlay allotment;

2. The remainder of the debt service from the County and City beer taxes, amusement taxes and alcoholic beverage taxes. The amount needed would be prorated between the County and City in proportion to the taxes collected from these sources.

A contractual agreement between the Quarterly County Court and the City Council would be involved.

Financing School Buildings in the Future

All future school plant needs should be provided from the proceeds of County-wide bond issues or current County-wide tax levies. Building needs for each system should be determined by a competent survey staff. Such surveys should be made at least every five years. The proceeds of bond issues should be allocated between the County and City school systems in proportion to need as determined by survey. The debt service on such bond issues should be paid from County-wide property taxes, County-wide beer, amusement and alcoholic beverage taxes and the state capital outlay allotment. A contractual agreement between the Quarterly County Court and the City Council would be required.

As pointed out previously in this report, the allocation of the proceeds of a county-wide bond issue between a county and a city school system in proportion to average daily attendance does not result in equitable provision for school plant needs in both systems. It actually results in either an over-appropriation or an under-appropriation to the county or the city. Such a system is wasteful.

The best method yet discovered for the determination of school plant needs is a survey made by competent, unbiased experts.

Operation and Maintenance Taxes

All operation and maintenance taxes should be County-wide and levied by the Quarterly County Court. City operation and maintenance taxes or appropriations for schools should be discontinued. This would involve an amendment to the City Charter which now requires a minimum levy of $.50 for schools. It would also involve an amendment to the state law which at present requires a separate system to levy a minimum of $.15 for schools. If it is not practicable to amend the state law, the Quarterly County Court should make an annual appropriation to the Knoxville City Council equal to the yield of the

$.15 levy, such appropriation to be considered as a reimbursement to the City Council for a contribution to the educational program of the County.

The allocation of operation and maintenance taxes between the County and the City school systems in proportion to average daily attendance should be abandoned. The present method is only a crude measure of need. For example, in sparsely settled areas of the County, it is necessary to maintain some small schools and in order to provide equivalent educational opportunity, it is necessary to operate with a smaller number of pupils per teacher in small schools than large schools. Furthermore, at the present time, the average training level of the Knoxville City teachers is somewhat higher than that of the County teachers. It has also been recommended under Plan II that in the interest of economy and efficiency, certain special services and programs be provided by either the County system or the City system for all of the pupils within the borders of the County. The method used in allocating the proceeds of operation and maintenance taxes between the County and the City system should make it financially possible to provide equivalent educational opportunities throughout the County and it should promote economy and efficiency. Therefore, the following method is recommended for the allocation of the proceeds of operation and maintenance taxes between the County and City systems:

1. The basic allocation should be made in proportion to the current expense cost of the Foundation Program as calculated by the Tennessee State Department of Education;

2. To the basic allocation should be added the costs for those special services or programs provided by either the County or City system for the entire County:

    a. If the item is included in the Foundation Program, the difference between the Foundation Program cost of the special program or service and the budgeted cost of that program as approved by the Quarterly County Court.

b. If the item is not included in the Foundation Program, the total budgeted cost of that item as approved by the Quarterly County Court.

Teacher Retirement

It is impossible to present firm recommendations on teacher retirement without making a detailed study of this problem. A careful study has not been made, and it is recommended that a thorough study of the teacher retirement problem be made by competent experts.

However, sufficient examination was made of the teacher retirement problem to present the following general recommendations and conclusions:

1. All rights of teachers now members of the City retirement system must be preserved. These rights include contributor rates, benefits, and age of retirement.

2. If Plan I is adopted, all teachers who are now members of the City system who choose to do so will remain members of the City system and all other teachers will be members of the state teachers' retirement system.

3. If Plan II is adopted and teachers in the annexed territory are made eligible to become members of the City retirement system, that system should be fiscally sound and improved benefits should be provided. At least the following changes are indicated:

   a. The retirement age should be increased from 50 years of age to 60, or 62.

   b. Rates for both the employee and the employer should be increased sufficiently to provide better retirement benefits than are now provided by the City system and sufficient to place the system on a sound fiscal basis.

c. Teachers who are now members of the City system should be given the option of remaining in the old system or transferring to the new system with improved benefits subject to paying the new rates and the difference between the old rates and the new rates for past years of service.

Concluding Comments

The financial recommendations presented under Plans I and II involve major changes in the fiscal policies of the Quarterly County Court and the City Council. It would be much simpler to implement Plan I than Plan II because it would involve far fewer changes in the law and far fewer contractual agreements. Changes in the law require legislative action and contractual agreements involve the problem of the extent to which the Quarterly County Court and the City Council can bind their successors in office. Furthermore, although both accomplish most of the same goals, Plan II is not as efficient as Plan I. Therefore, Plan I is recommended as preferable to Plan II.

The acceptance of either plan involves the risk that the Quarterly County Court might not be willing to finance an educational program for the entire County on as high or a higher level than that now provided by the City system. However, Knox County is an urban county and the Quarterly County Court is elected by all of the people of the County. Due to the distribution of the population, most of the members of the Court will reside within the new City limits and the risk should not be great.

The relationship of sound financing to organizational structure has been described in presenting two plans for the Knox County and Knoxville public schools. One of these plans is considered more sound than the other for financing education in the long run. In all other aspects as well as financing, the structure, organization and administration of public school programs are equally important to efficient and economical education. Accordingly, in the ensuing and final part of this report more specific treatment is given to these essential means for better education in the metropolitan area.

Footnotes

[1]Johns, R L., and Morphet, E. L. Financing the Public Schools. Englewood Cliffs, N. J.: Prentice Hall, 1960.

[2]Tennessee Taxpayers Association, County, City and Town Government in Tennessee, Nashville, 1960.

[3]Sales Management, Philadelphia, Pa., May 10, 1961.

[4]Metropolitan Planning Commission, A Study of Urban Knoxville, Knoxville, 1960.

General References

City of Knoxville, Reports and Records.

Knoxville City Board of Education, Reports and Records.

Knox County Board of Education, Reports and Records.

Knox Cfounty Quarterly Court, Reports and Records.

National Education Association. Estimates of School Statistics, 1961-62. Washington: The Association, 1962.

State Department of Education. Public School Laws of Tennessee (Compiled by State Department). Nashville, Tenn.: The Department.

U S. Office of Education. Trends in Financing Public Education. Washington: U. S. Government Printing Office, 1961.

U. S. Bureau of the Census, 1960 Census. Washington: U. S. Government Printing Office.

Administration

PART V

ORGANIZATION AND ADMINISTRATION

Educational administration has developed historically from simple school management to educational leadership. The concept of home rule in education has long been accepted as a part of American democracy. The local school district was created to provide the structure through which home rule in education could be achieved. The trend for many years has been toward larger and larger districts. Thus, growth in the size of school districts and the development of educational administration as leadership have been concurrent, with each facilitating the other.

Emphasis on educational administration as leadership and concern for effective organization of school districts have been heightened by such factors as the frowing complexity of school programs, the increasing proportion of the tax dollar which goes for schools, the necessity for improving the quality of education in a world of competing philosophies and the importance now being ascribed to educational administration as a part of public administration and public policy. All of these factors point to the leadership role.

Another important factor in the development of school administration is a considerable body of new knowledge concerning administrative theory and the nature and consequence of effective leadership. It has been observed for a long time that how a school system is organized and administered bears a relationship to the adequacy of its educational offerings. A district with excellent resources for good schools might have an educational program which languishes because the system lacks effective leadership or is poorly organized. On the other hand, school districts with less adequate financial resources may by virtue of good administrative leadership offer better school programs than would be expected as a rule.

Within the last few years, much effort has been made to increase the effectiveness of educational programs through improving the organization and administration of

school systems. During the past ten years, one major foundation alone has invested about seven million dollars in research and experimentation designed to improve educational administration.

Experience, research, and experimental programs have made available knowledge which makes it possible to develop guides for use in appraising the adequacy of school districts and their organization and administration. Such guides provide yardsticks for a more objective evaluation than has heretofore been possible. Criteria in the form of guides for use in this study follow.

Evaluative Guides

In America, education is a function of the state. Therefore, we have no national school system. Instead, we have fifty state school systems. Each of the fifty states has developed its own school system within the framework provided by constitutional authorization and subsequent legislative action and court interpretation.

School Districts

While there are many differences in the various state school systems, there are also a number of important common factors. Among these factors is the local school district. Each state in the continental United States has created subdivisions within its boundaries to which it has delegated some of its responsibilities and authorities for public education. These subdivisions are known as school districts. They are often coterminous with other local units of government such as the county and city.

School districts vary in authority from state to stage but in all instances they are arms of the state government in educational matters and are empowered to organize, maintain, and administer schools in the communities they represent under laws, rules, and regulations of the state. It is thus possible for schools to remain close to the people whom they serve, which is crucial in a democracy which holds to the principle that all people should be educated and that education should be adapted to community and individual needs. Under this pattern of organization, a national system of education which might become an instrument for controlling the minds of people rather than an instrument for the development of people is not possible.

As would be expected when there is freedom for considerable local initiative and control over schools, many types of school districts have been developed. On the basis of much experience with different kinds of districts, certain characteristics of a good school district may be set forth. Among these characteristics are the following:

1. The number of children to be educated in the district should be large enough to justify a comprehensive educational program which makes provisions for the educational needs of all children at unit costs which are not unreasonable because of small numbers.

2. A tax base should be available which is sufficient to provide healthy local financial support for the schools.

3. The school district should be a natural social and economic unit.

4. The school district should:

   a. keep control of the schools close to the people,

   b. be fiscally independent,

   c. have a representative board of education responsible only to the people,

   d. provide for adequate organization and administration of the school system,

   e. foster good relationships with other units of government.

School Boards

Another unique aspect of the public school system of this country is the local board of education. Schools are governed on the local level by such boards. They are the organizational link between the school system and the people it serves. It is through these boards that a large measure

of local control over education is maintained and preserved. Their importance would be hard to exaggerate.

Among criteria of a good school board are the following:

1. The board is responsible to the people of the school district.

2. The powers and responsibilities of the board are clearly defined and properly understood.

3. The board has appropriate power to carry out decisions made within its jurisdictions.

4. The board discharges legal responsibilities spelled out in the laws such as approving the appointment of teachers, approving the school budget, and carrying out rules and regulations of the state board of education.

5. The board functions as a unit in the best interest of the entire school system.

6. The board appoints its superintendent and recognizes him as its executive officer.

7. The board concerns itself primarily with the development of policy for the public schools, the evaluation of school programs, and planning for program development.

8. The board makes continuous efforts to keep the public adequately informed and appropriately involved in educational matters.

Organization and Administration

The characteristics of a good school district and a good board of education, as outlined, provide a sound foundation for the effective organization and administration of a school system.

Organization is concerned with a structure or structures through which education is provided, administered, and supervised. Administration involves the actual manage-

ment of the school system, policy development and implementation, planning, coordinating, evaluating, program development, and so forth. Hence, organization and administration are closely interwoven, with each being dependent in important ways on the other. Therefore, it is difficult clearly to separate them. However, for purposes of this study, such separation is unnecessary and they will be considered together in the formulation of guides.

Characteristics which indicate that a school system is well organized and administered include the following:

1. The school district is organized so that its functions may be logically achieved through the intelligent allocation of responsibility and commensurate authority.

2. The affairs of the school district are conducted under clearly understood policies which give direction to the school program, encourage wise management of its affairs, and promote the best use of professional competence.

3. Administrative and supervisory functions reflect the concept that their purpose is to facilitate the development and maintenance of an educational program adequate for the needs of the school district.

4. Administrative and supervisory services stress leadership roles rather than mere management functions.

5. Administration and supervision make provisions for adequate career development programs for all personnel.

6. Administration and supervision are based on dprinciples of sound democratic leadership.

7. Administration and supervision make provisions for the adequate involvement of lay citizens in educational affairs.

8. Administration and supervision are concerned constantly with program evaluation.

9. Administration and supervision provide for adequate two-way communication within the school system and with the people.

10. Administration and supervision provide for adequate research and experimentation.

These guides deal largely with means rather than ends. Their function is to make organization and administration as effective as possible in enhancing learning. The chances of having a good educational program are greatly increased when a school system rates high on these criteria and their presence indicates that the school system has had good leadership. Effective home rule is facilitated by the use of such criteria.

The School Districts in Knox County

There are two school districts in Knox County. One is the constitutional district, Knox County, and the other is the City of Knoxville. The latter is surrounded entirely by the Knox County school district. The present County district includes an area of approximately 500 square miles. In 1960, it had a population of 138,696, an increase of 41.2 per cent since 1950. There are 80 schools in the county, 10 of which are high schools and 70 are elementary schools. These schools enrolled 32,037 students (grades 1-12) in 1960. However, these statistics will be obsolete when the present annexation program is carried out. Twenty-nine schools are in the area to be annexed. These schools have over 600 teachers and enroll about 17,000 students.

Population of the City was 11,827 in 1960, a decrease of 10.4 per cent since 1950. Under the annexation program, Knoxville will increase in area to 77.3 square miles; its population will increase to 181,700, and its school enrollment will increase from 22,600 to nearly 40,000.

The shift in area and population to City jurisdiction will have profound effects on both school districts. A series of new problems will be posed. Plans for the shifting of more than half of the County school system to the City system which are fair to both districts will be exceedingly difficult to develop and put into effect.

The Knox County school district was established in accordance with general laws pertaining to school districts in Tennessee. These require each county to establish and operate a county public school system. In Knox County the county board of education and a superintendent of schools are elected directly by the people. Under home rule principles traditional in Tennessee, general legislation is often modified by local acts. The Knox County school district is relatively free of questionable local legislation.

The County has a board of education composed of seven members elected by popular vote on a County-wide basis (including the City) but representing specified districts. The duties and responsibilities of this board are set forth in general and special legislation enacted by the General Assembly of Tennessee. This legislation tends toward the specific and does not emphasize the leadersip role which seems essential today.

Provision is made for a chief school executive who is designated as superintendent of schools. The superintendent is chosen by popular vote of the citizens of Knox County, including Knoxville. The superintendent functions as the executive officer of the board of education.

The State Constitution and State legislation affect all school districts by requiring fiscal dependence upon a political subdivision. Each county school budget must be submitted to the County Court for approval. The Court may reject, amend, approve, or modify the proposed budget.

The County purchasing agent also serves as purchasing agent for the school system.

Although the County is the constitutional school district in Tennessee, provision is made for the establishment of city or town school districts and special districts.

The Knoxville school district is the former type, falling under the general state provision for a city or incorporated town to establish and operate a system of public schools. The charter of the municipality must provide for the school system.

The Knoxville Charter stipulates that the City school system is to be under the direction and supervision of a five-member board of education (except as may be otherwise stipulated in the Charter). The board members are to be elected by popular vote for terms of four years with two members chosen in one general election and three in the following general election in order to avoid complete turnover in board membership at a single election.

The board is given full power and control over all matters pertaining to the conduct of public schools within the City except as other provisions in the Charter or general laws or ordinances of the board itself may dictate. Chief exceptions to this general grant of power to the board concern fiscal matters. The board of education is required to prepare and submit for approval an annual school budget to the City Council through the chief executive in the same manner outlined in the Charter for preparation of budgets by the general administrative departments of the City.

The Charter states that the City Council may reject recommendations of the board of education concerning school sites, plans and specifications, but that no school building is to be erected on a site unless the board of education, by a majority vote, approves the site.

The Charter also provides for a director of law to serve as legal counsel for the board of education and the school system. It is unlawful for the board or any officer of the board to employ, except at personal expense, any attorney, thus requiring in effect that the board rely on the City Director of Law for all legal advice and services. This means that the department of law of the City, in addition to providing advisory services, must also prosecute and defend any suits involving schools, secure any injunctions which may be desired, enforce contracts, and apply for such legal remedy as may be necessary to compel performance of duties of any school official.

Detailed provisions are in the Charter concerning teacher tenure and dismissal or changes in position at reduced salaries of employees of the school system. Dismissal procedures require the superintendent of schools to prefer charges in writing. The employee so charged is entitled to a hearing before the superintendent of schools. Upon completion of a hearing, the superintendent who is then acting as judge shall render his decision within ten days. The defendant may appeal to the board of education in five days after receipt of the decision. The superintendent at this point assumes the role of prosecutor before the board. If the person is dissatisfied with the decision of the board, he then has a right to appeal to the Chancery Court of the County.

Changes in the City Charter are made relatively easily and occur with considerable frequency. The Charter may be changed by a majority vote of qualified voters in the City at the time of a state legislative election.

Evaluation of the Districts

Both school districts have a sufficient number of children to be educated to justify an educational program adequate for the needs of all children and youth in the district at reasonable costs.

The Knoxville school district now has a more adequate tax base for provision of desirable local support for the schools because of access to City general funds. The tax base in Knox County, while superior to that in many counties in Tennessee, is not adequate after the share for City schools is removed in comparison to the City tax base. The entire County's social and economic fabric is so interwoven that school district lines have no meaning with respect to a just division of wealth to support schools.

Neither of the school districts is a natural social and economic unit. The City district comes nearer meeting this criterion than does the County district because it draws upon the central source of industrial and commercial wealth in the County. The County contributes substantially to this wealth because many of its citizens make their professional and business contributions within the City.

Neither of the districts makes legal provisions for keeping direct control of the schools close to the people. On the contrary, both have legal barriers to meeting this criterion. These barriers provide for divided systems of control between the people, the board of education, and the County Court or City Council.

The consultants feel both districts fall short on the criterion of adequate taxing power for education. Each school district is fiscally dependent upon another governmental body, the County Court or City Council.

While both districts provide for a board of education, restrictions are placed on board authority in that each is fiscally responsible to the County Court or City Council. The boards are free to act as policy-making and evaluating agencies within fiscal limitations although their legal authorizations do not mandate these functions.

In general, good relationships appear to exist between the school districts and the other local units of government. The major exceptions encountered were in the City.

The Boards of Education

The membership of both County and City boards of education is composed of public-spirited citizens who take seriously their responsibilities as public servants. They work diligently at their jobs and give unstintingly of their time to affairs of the board.

A study of minutes of board meetings of both school systems indicates that the boards have concerned themselves largely with those responsibilities mandated specifically by law. Much time is required in the approval of bills for payment, approval of appointments of personnel, acceptance of resignations, and other day-to-day considerations in the operation of a school system.

Matters of policy come in for fairly frequent attention. Among policy matters which have been considered recently are questions concerning whether or not students can be used to raise funds for school purposes, whether or not school property should be used by community groups,

whether or not fraternities and sororities should be recognized in the high schools, what provisions should be made for educating the handicapped, and matters related to staffing the schools. These kinds of issues arise in connection with the normal ongoing operation of a school system.

The Knox County School Board has been faced for the past several years with tremendous problems of constructing new school plants and increasing the number of professional personnel to take care of expanding enrollments. Substantial capital outlay funds have had to be provided from local sources. When general obligation bonds have been issued, the receipts have been divided with the City on the basis of a formula which allocates the funds in terms of the ratio of average daily attendance in each school system to the combined average daily attendance of both systems. Although the tax base for the entire County, including the City, is utilized in issuing these bonds, the City has its own building program which is financed independently of the County program. This situation has made it impossible to allocate building funds on the principle of placing them where they are needed most.

Each board holds a regularly scheduled monthly meeting. The respective superintendents prepare agendas for board meetings and submits them in advance of the meeting. Both boards have found it necessary to hold numerous meetings in addition to those regularly scheduled. The County board held 25 meetings in 1957, 31 in 1958, 17 in 1959, and 44 in 1960. Many of these meetings were concerned with matters related to building programs and included planning for the construction of new buildings, expansion of old buildings, and the renovation of old buildings. The City board of education held 37 meetings in 1957, 25 in 1958, 23 in 1959, and 23 in 1960. It has also found it necessary to spend considerable time on building problems.

Laymen in both school districts feel free to attend board sessions and do so in considerable numbers from time to time. It is not infrequent, especially in the City, for delegations to appear before the board with special requests dealing with what they consider unsatisfactory conditions surrounding a school or perhaps the

qualifications of a teacher. Both boards hold needed executive sessions. All other sessions are open to the public.

While both boards are elected by popular vote, neither is wholly responsible to the people of its district. Divided control is not in the best interest of educational advancement. It invites dissension and frustration on the part of school personnel. It makes extremely difficult the formulation of long-range plans and their implementation. Divided control is one of the most serious immediate problems inasmuch as this factor conditions to a considerable extent how pressing problems facing both school systems are to be handled.

Evaluation of the School Boards

The powers and responsibilities of each board are well defined and clearly understood.

Neither board, however, has complete power to carry out its decisions, an illustration being the lack of final authority over the school budget.

Both boards do an excellent job of discharging responsibilities specifically allocated by law. Both boards properly go beyond the discharge of legal responsibilities and consider questions and issues which can be handled best through the formulation of policy. However, problems concerning the day-to-day operation of the school systems have been so demanding that matters of long-range policy and development have lacked sufficient attention. Perhaps for the same reason, basic questions concerning the adequacy of educational offerings have not received sufficient attention in the past.

The Knox County Board appears to function successfully as a harmonious unit in the best interest of the entire school system. The City board has a less enviable record in this respect. Historically, it has been difficult for County boards of education in Tennessee to meet this criterion due to the fact that initially districts were divided into sub-units with each board member being given centain administrative responsibilities either legally or in practice for the area he represented. The Knox County board has gone far toward overcoming this

violation of good board practice. On the other hand, the City which had no such historical precedent has occasionally suffered from lack of harmony within board ranks. There has been some tendency for factions to develop within the board and for individual board members to make commitments which they had no authority to make.

Each board recognizes in principle that the superintendent of schools is its executive officer and leaves to him the administration of the school system and the implementation of board policy. Actual practice with respect to this criterion has created problems for the City school system. For example, the board has occasionally usurped administrative functions by making appointments to the central office staff and in the selection of principals without benefit of, or contrary to, recommendations of the superintendent. Individual board members have espoused the appointment of persons not recommended by the superintendent and on occasion such appointments have been made. If the recommendation of the superintendent is not to be followed, the decision should be on the basis of professional competence of the person recommended and the superintendent should be asked to bring in other recommendations rather than to have nominations come from board members. The present practice can do no good for the school system.

While each board makes efforts to keep the public informed and involved in appropriate ways with respect to education, neither is doing quite the job demanded in this area. The increasing importance of public education and the problems faced in the ongoing development of adequate education call for more extensive public involvement than has heretofore been considered essential.

Current Organization and Administration of the School Systems

How a school system is organized and administered is dependent to a considerable extent upon the basic legal structure within which it must function. It is also dependent upon how those responsible for the organization and administration of the school system use the power entrusted to them, how they perceive their roles, and how well they relate to other individuals and governmental agencies. A further factor influencing organization and administration is tradition and previous practice.

Knox County

A chart showing how the Knox County School System is presently organized is shown on the next page. It will be noted that the voters of Knox County, including those in the City of Knoxville, elect members of the board of education, the superintendent of schools, and members of the Quarterly County Court, and the County judge. The chart shows the divided control and responsibility for the County schools referred to earlier. The board, the superintendent, and the County Court must work together in the discharge of certain fiscal responsibilities and authorities which in many respects overlap or are not clearly delineated.

The superintendent of schools is responsible to the voters rather than to the board of education. The superintendent is responsible in some respects to the Quarterly County Court also. Even if such divisions of responsibility could be clearly spelled out, the situation would be a difficult one for the superintendent since the person must answer to more than one authority.

The internal structure of the school system makes a number of officials who have varying degrees of responsibility directly responsible to the superintendent. Among these officials are the supervisor of maintenance, the business manager, the supervisor of safety and transportation, the supervisor of census, and the director of instruction. It appears that the director of instruction functions essentially as an assistant superintendent for instruction. It will be noted that all personnel in the instructional program are responsible directly to this official. The director of instruction is responsible directly to the superintendent, as is shown on the chart.

While the organization chart is not clear on this point, the principals in Knox County are recognized as being important in the overall organization of education. They are viewed as being leaders in their respective attendance areas. While autonomy of the attendance center leaves considerable latitude for local initiative, principals work within agreed upon and understood policies regarding the instructional program.

administrative staff might well give further attention to proper involvement of lay personnel.

Excessive work loads and shortages in the administrative staff make very difficult constant attention to overall program development and evaluation. While the staff is to be commended for what it has been able to do in this respect, further efforts would be in the best interest of the school system.

Complexity in the organization of a large school system emphasizes the necessity of adequate provision for two-way communication within the school system and with the people of the district. The heavy staff loads and inadequate numbers of personnel have relegated this function in practice to a level of secondary importance. This is not desirable and should be corrected.

Research and experimentation at significant levels is important for the adequate development of good schools and their continuous improvement. These functions call for definite staff assignments. Adequate attention to these areas has not been possible thus far because of lack of personnel. This may be said to be one of the major weaknesses in the Knox County schools.

The organizational chart presented later provides for certain recommendations concerning needed areas of development which have been suggested in this brief evaluation.

Knoxville

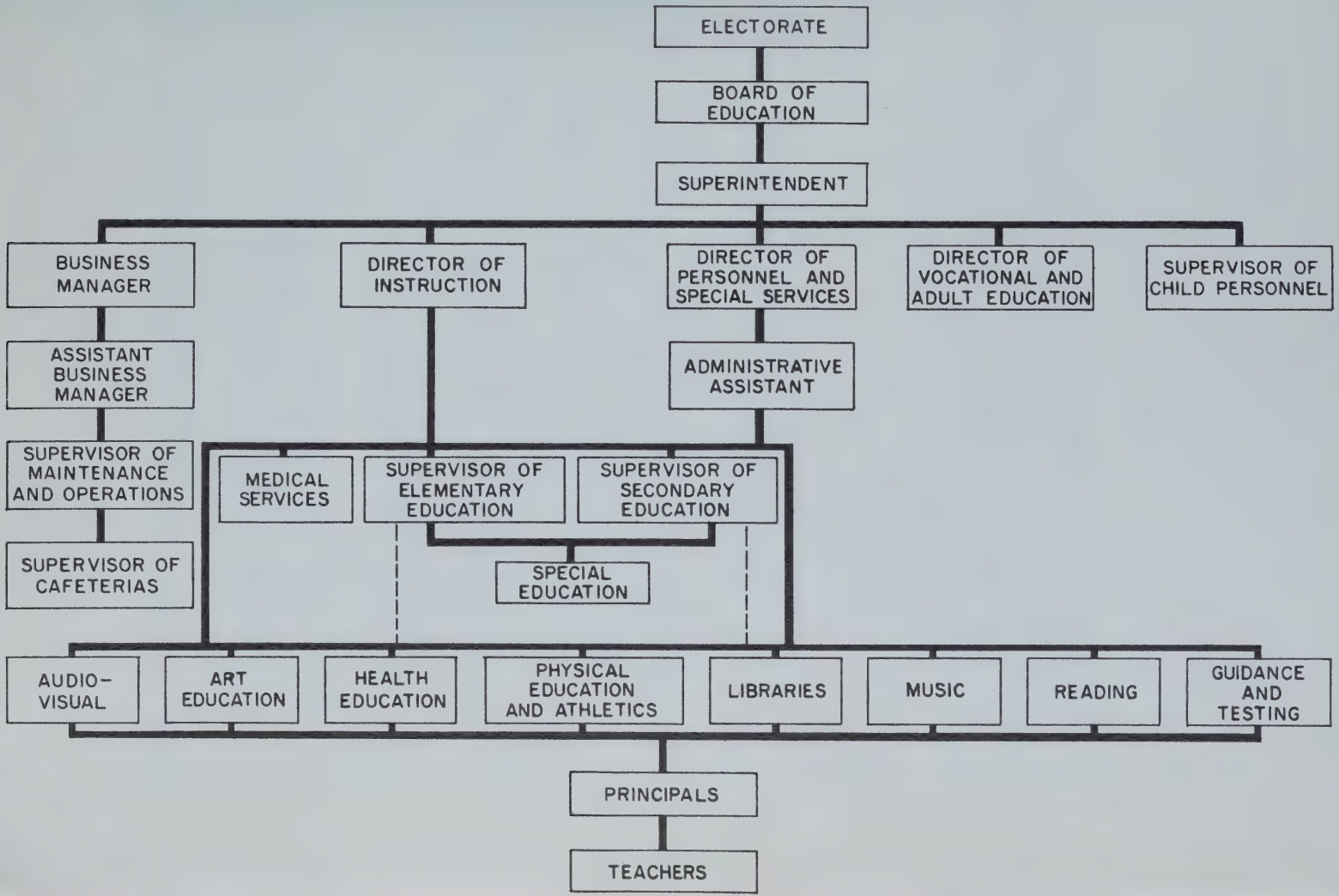
The organization and administration chart for the Knoxville City School System is shown on the next page.

The board of education is responsible to the people. However, as previously pointed out, the board is responsible to the City Council in a number of ways, including budget approval and certain aspects of fiscal management. The City law director, who is not shown on the chart, is legal counsel to the board of education and the school system.

FIGURE XII

KNOXVILLE CITY SCHOOL SYSTEM

ADMINISTRATIVE ORGANIZATION



PART VI

IMPLEMENTATION

This portion of the study is devoted to the implementation of Plan I or the merger of the Knoxville and Knox County School systems. This recommended course for the resolution of our local educational problems, proposes fundamental adjustments in the educational framework of Knoxville and Knox County. To assure the maintenance of high educational standards, certain steps should be taken at both State and local level and assurances given that will guarantee educational improvement.

If the school systems of the City of Knoxville and Knox County are to be merged, it will be necessary that the Charter of the City of Knoxville be amended to abolish the City Board of Education and all sections dealing with the duties of this Board. It would also be necessary to remove the requirement for the $.45 school tax levy and the special $.05 levy provided for school buildings and additions. This could only be done by referendum with the affirmative vote of the electorate concurring in such action.

The argument has been used that the residents of the City would be transferring the future of public education to the County. It could also be argued that this action would merely be extending the present corporate school district boundary to include the balance of County district. Upon the completion of the annexation program, the City will have added to its school district over half the children in the present County district. It should not be much more difficult to merely absorb the remainder of the County's children in converting the present two districts into a single district serving the entire County. Legally, the merged district would be a County district. This is largely an irrelevant matter since it would be serving alike all children in the metropolitan County. The condition that exists today, two distinct districts, is somewhat fictitious, since for the purpose of electing the County Board of

Education, the County school superintendent, and the Quarterly County Court, and for certain other taxing powers, there is in reality already a County-wide district.

The County Board of Education is composed of seven members, elected at large but living within districts. The First School District and the Second School District are situated entirely in the central City of Knoxville.

The Third School District, which comprises the Fifth Civil District, is situated partially inside the central City and partially outside. Upon the completion of the annexation program it will be almost entirely within the new City.

Most of the Fourth School District will be beyond the confines of the new City, however, populous portions of this district will be inside.

While the Fifth School District, the Seventh Civil District, is largely outside the old City, a populous portion of Fountain City already annexed is in this district and upon the completion of the annexation program most of it will be inside the new City.

The Sixth School District is entirely outside the new City. This district comprises the Eighth Civil District in the eastern part of Knox County.

The Seventh School District, which encompasses the Ninth Civil District, is situated south of Fort Loudoun Lake and all of South Knoxville is presently within this District. Upon the completion of the annexation program, additional populous portions will be situated inside the new City.

As can be seen, the Knox County Board of Education will be largely controlled by the citizens of the City of Knoxville. Only one school district is entirely outside the new City and a second which is largely outside has a populous portion inside.

Four of the positions on the Board of Education of the County become vacant this year and an election is

to be held in August. In addition, one of the members of the Board has resigned and his position will be filled. In all, there will be five vacancies in the County Board of Education to be filled in August.

The Knox County Court is composed of 19 members elected on a civil district basis and representative of all Knox County, including the City. Each of the nine districts is represented by two Justices of the Peace and Civil District One located in the City, has three. Upon the completion of the annexation program all the civil districts except one will be in whole or part in the new City. This means, of course, that the citizens of the City will be well represented in the Quarterly Court of Knox County. The prime function now of the Quarterly County Court is education and this will most likely continue to be the case in the future. The superintendent of County schools is elected by all of the people, both inside and outside the City.

In bringing about a single school system, provision would have to be made for the employment of administrative and supervisory personnel in the City school system in positions comparable to those they now hold. This should not pose a serious problem, since there is a need for staff expansion at the administrative level. The tenure of City teachers would have to be honored and they should be guaranteed that they would not be shifted in their job positions to other areas.

It would be desirable that the chief executive officer of the new school system be selected by the Board of Education and responsible only to the Board. This method of selecting the chief school executive is well established and the weight of experience demonstrates its soundness. This is at present not possible in Tennessee, since it would be in conflict with State law. Even though the County superintendent of schools is not a constitutional office as such, court cases have held that, as his duties are now defined by statutes, the position is a County office and must, therefore, be filled by vote of the people or by appointment at the hands of the Quarterly County Court.

Competent legal opinion now supports the position that the General Assembly could either abolish the office of County superintendent of schools or sharply limit the duties of that office by a general act. It would then allocate to the Board of Education the functions now served by the superintendent. A Board of Education would thus be free to appoint the chief school executive.

To bring about a merged or single school system as proposed under Plan I, the following steps could be taken:

1. The County Board of Education should commit itself to the raising of teacher salaries to the City level once the single system has been created. The Board should also commit itself to the protection of tenure rights and job security of present City teachers.

   City teachers presently under the City retirement program should be given the right to continue under this program, or should they so desire, transfer to another program.

2. The Quarterly County Court should also commit itself to provide the necessary financial backing required to increase teacher salaries to the City level upon the completion of merger.

3. The Knoxville City Council should commit itself to transfer the debt on schools to the County with the necessary monies pledged to back it as outlined in Part IV.

4. The School Board of the City of Knoxville should indicate its willingness to bow out to enable the establishment of an improved educational program for the entire community.

5. The adoption of a resolution or an ordinance by the City Council some time prior to the fall election placing the necessary charter revisions up for referendum. The adoption of a resolution or an ordinace to make the

abolishment of the City school system subject to affirmative referendum vote and subject to the County committment to up-grade the merged school system.

6. The referendum taking the City out of education could be held in November, 1962, and subject to favorable vote, the Quarterly County Court of Knox County should proceed to upgrade its system, and the Council to formally make effective its resolution or ordinance abolishing the City school system and going into the single system.

7. Efforts should be made to amend the General Act governing education in Knox County and other metropolitan counties, removing or circumscribing the position of office of superintendent of schools. This could not be made effective until after the incumbent's term has expired, since to do so would be a violation of the constitution and, therefore, illegal.

   Following the necessary legislative action and directive, the administrative duties of the superintendent of schools should be turned over to the Board of Education, which in turn would have as its prerogrative the right of employment of someone to fill this position.

8. Possible effective date: July 1963.

The possible effective date of July, 1963, was selected as it corresponds with the budget year of Knox County when consideration would have to be given to providing funds for the new single system. The City and County would have until the beginning of the 1963 school year to work out the final details of going from the dual system existing today to the single system proposed under Plan I.

No recommendations have been made for implementation of Plan II, since this not only is more complicated

than Plan I but also is not considered nearly as adequate a solution to either the existing school problems of the future educational needs of the community.

Recognizing that these steps if carried out will result in a fundamental and basic change in the form of services provided by local government, it will be necessary that negotiations be worked out in advance to properly assure and guarantee to Knoxville and Knox County that the full interests of both will be protected. This could be accomplished through the early establishment of a working relationship between the two school boards and administrative staffs with the goal of carrying out this plan for a single system.

ACKNOWLEDGEMENTS

The Metropolitan Planning Commission and its staff wishes to express its appreciation to the consultants for their unstinting efforts in carrying out their phases of the School Study. They extended themselves much beyond the normal requirements of their consultant contract time after time in their efforts to make the Study as complete and comprehensive as possible. The consultant team was made up of the following men, each ably qualified and outstanding in his field.

A. D. Albright

Dr. Albright is provost of the University of Kentucky, Lexington. He received the bachelor of arts degree from Milligan College, the master of science degree from the University of Tennessee, and the Ph.D. from New York University.

He has been a public school teacher and supervisor. Several positions were held in the Tennessee State Department of Education during 1939-1949. He was associate director of the Southern States Cooperative Program in Educational Administration, supported by the W. K. Kellogg Foundation, for four years at George Peabody College for Teachers and then became director of the Bureau of School Service and chairman of the Division of Educational Administration in the College of Education at the University of Kentucky, where he later became executive dean of Extended Programs.

During his professional career, he was associate director of the Study of Public Higher Education in Tennessee (1957), director of the Study of the West Virginia Board of Education (1960), consultant to the Local Education Commission of Atlanta and Fulton County (1959), consultant to the Governor's Fact Finding Commission in Connecticut (1950), and consultant and director for numerous local studies and research in several states.

He has authored articles and papers in professional journals, served as editor of several publications, and has written and co-authored books, monographs and bulletins.

R. N. Finchum

Dr. Finchum is currently a specialist in school plant management in Washington, D. C. He earned his bachelor of arts, the master of science and the doctor of education degrees at the University of Tennessee. His public school education was gained in Sevier County and Sevierville, Tennessee.

His professional experience began with six years in classroom teaching. He then became a high school principal and served three high schools, two in Kentucky and one at Norris, Tennessee, between 1934 and 1947. He has been superintendent of an independent city system for seven years. In the Tennessee State Department, Dr. Finchum was director of School Plant from 1955-1958.

He is an active member of the National Council on Schoolhouse Construction, the Association of School Business Officials, the American Association of School Administrators and other professional organizations.

Articles he has written have appeared in the School Executive, Educational Business, School Life, and other professional periodicals. Monographs of his authorship, covering school insurance and plant management, have been published by the U. S. Government Printing Office.

Dr. Finchum has conducted numerous surveys of physical facilities, business management and plant construction in local school systems.

R. L. Johns

Dr. Johns is currently Head, Department of Educational Administration in the College of Education, University of Florida, Gainesville. He earned his

bachelor of science degree at Southeast Missouri State Teachers College, the master of arts degree and his Ph.D. at Teachers College, Columbia University.

In addition to his present position which he has held since 1946, he served as public school teacher and administrator from 1918-1925, then professor of educational administration at Alabama Polytechnic Institute (now Auburn University) for eight years, followed by service from 1936-1946 as director, Division of Administration and Finance in the Alabama State Department of Education.

Dr. Johns has been consultant on finance for the states of Alabama, Arkansas, Colorado, Florida, Georgia, Indiana, Kentucky, Louisiana, Mississippi, Missouri, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, and West Virginia. He served also as consultant in finance to the Committee for the White House Conference on Education and the National Citizens Commission for the Public Schools. Numerous local school systems have had studies directed by him in school business administration, finance and physical facilities. He has been executive secretary and editor of publications for the Southern States Work Conference for more than a decade. Numerous technical articles in professional journals bear his name as do three major books on school finance and administration.

John S. Martin

Dr. Martin currently holds the position of coordinator of the Metropolitan School Development Council, an organization which is responsible for joint activities between the City of Atlanta and Fulton County school systems. He received the bachelor of science degree from Auburn University in 1951, a master of arts degree from the University of Alabama in 1956, and doctorate degree from Auburn University in 1959.

He taught physics and chemistry at Bessmer High School, Bessemer, Alabama for five years and served as president of the science teacher's division of the Alabama Education Association and was responsible for in-service programs for teachers during his career in Bessemer.

During the summer of 1959 he joined the staff of the University of Alabama to prepare state-wide courses of study for chemistry, mathematics, and physics for use with educational television instruction over the Alabama Educational Television Network. Dr. Martin received a grant for research from the W. K. Kellogg Foundation, and while completing his graduate work, he conducted studies of three school systems in Alabama and assisted in studies of 21 county school systems in that state.

In 1959 he was appointed administrative assistant and coordinator of research for the Local Education Commission of Atlanta and Fulton County which made a two-year study of the Atlanta and Fulton County school systems. After completing this study, Dr. Martin organized and implemented the Metropolitan School Development Council.

Truman M. Pierce

Dr. Pierce received his undergraduate degree from Piedmont College, the master of arts degree from the University of Alabama and the doctor of philosophy degree from Columbia University.

He spent several years in public school administration and teaching, served as Dean of Troy State College, professor of education at the University of Tennessee, professor of education at George Peabody College and director of the Southern States Cooperative Program in Educational Administration before moving to his present position as Dean of the School of Education at Auburn University. He has also served as visiting professor at Stanford University and the University of Wisconsin as well as guest lecturer at a number of other institutions of higher learning.

Dr. Pierce has done research in education and conducted school surveys in various parts of the country. He has been director of a regional survey of education in the South, director of a survey of public higher education in Tennessee, director of research for the Local Education Commission of Atlanta and Fulton County, and associate director of a study of the West Virginia State Board of Education.

He is author and co-author of several books in educational administration and has written extensively for publication in professional magazines, bulletins, and pronouncements of various educational commissions.

He holds membership in various state, regional and national organizations, commissions, and committees. His service includes positions of leadership in various of these groups.

W. Paul Street

Dr. Street has been director of the University of Kentucky Bureau of School Service since 1957. He earned a bachelor's degree "with high honors" at Northern Illinois University, the master of arts and the Ph.D. at Northwestern University.

He has been a rural teacher, a high school science and English teacher, and a college teacher and administrator. Dr. Street was director of the National Education Association Centennial during 1955 to 1957.

He has served as director of various studies, including the administrative structure of higher education in Illinois, teacher education in the same state, and three county and two city education surveys. His professional experience also includes consultant services in studies of community recreational needs, planning for school plant, appraisals of building and program needs, and problems of school consolidation.

Professional leadership has been givey by Dr. Street in various organizational offices, such as membership on the Illinois Commission on Teacher Education and Professional Standards, president of the Illinois Education Association, chairman of the Illinois Education Governing Board on Public and Professional Relations, president of the Joint Alumni Council of Illinois State Colleges, and chairman of the research committee of the Kentucky Association of Colleges, Secondary and Elementary Schools.

He has written extensively for professional publications and has been editor of several, one being the quarterly Bulletin, the University of Kentucky Bureau of School Service.

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